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Choice



Underground AV
Basement cinema
blows us away! p30

Why 2016 is the...

Year of OLED

Next-gen Ultra HD screens from LG and Panasonic lead a TV revolution

ON TEST

Pioneer AV amp
JBL 5.1 system
Epson projector
Panasonic PVR

MEGA MOVIES!
Blockbuster
flicks to see
in 2016

FILM & TV

- FANTASTIC FOUR
- TRUE DETECTIVE
- AGENT CARTER
- EVEREST ■ SHANE
- JEKYLL & HYDE
- CANNONBALL RUN

GONE ROGUE

M:I - Rogue Nation
packs an awesome
Atmos punch, p100

Apple TV
Tech giant targets
your cinema room

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→ PUSHING BLU-RAY TO ITS LIMITS → AVOIDING SPOILERS → COMPETITIONS

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*Please confirm with the dealer in your area regarding Dolby Atmos, not all are upgraded yet.

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The year's biggest movies – p22

WELCOME

...to 2016, the year that 4K home cinema finally becomes more than just a dream for many of us. Yes, you heard me, the next 12 months promise to be among the most pivotal in AV history.



Why? Because technologies that have been seeded in recent times are all set to flourish. Our twin cover stars are perfect examples – OLED TVs with support for Ultra HD and High Dynamic Range images, **these are screens that just beg to be drooled over**. Want sources? 2016 will see the arrival of 4K Blu-ray software and hardware, plus Sky's new Sky Q Ultra HD platform (see p18 for a lowdown on the latter). And 3D audio is becoming more than a mere side-dish, too. Titles like *Mission: Impossible – Rogue Nation* and *Everest* bring more Dolby Atmos thrills to your cinema room (see Playback, p97) while AV receivers such as Pioneer's stonking SC-LX89 (p40) are on hand to help. So roll on the rest of 2016!

Mark Craven
Editor



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The UK's most experienced TV tester cut his teeth as an early HCC staffer



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BULLETIN

→ **News Highlights** **PANASONIC** Ultra HD Premium TV and 4K Blu-ray player unveiled
LG Revamps WebOS, teams up with Ridley Scott **BOSE** SoundTouch multiroom range adds new models and Bluetooth functionality **DOLBY** Ministry of Sound adopts Atmos audio **NEWS X10** The hottest news stories in bite-sized chunks **GAME OF THRONES** The carnage continues on Blu-ray and DVD **AND MORE!**

Budget belter?

Wharfedale DX-1SE → www.wharfedale.co.uk



British loudspeaker specialist Wharfedale has unveiled the successor to its compact DX-1 HCP array – itself an *HCC* Best Buy award-winner back in 2012. The new DX-1SE 5.1 package comes in at a snip under £400 and consists of four DX-1SE Satellites (each with a 0.75in silk dome tweeter and 3in mid/bass driver), a DX-1SE Centre (marrying the same tweeter to two 3in mid/bass drivers) and the WH-D8 8in subwoofer. The system is available in black and white high-gloss finishes. An optional 'satellite expansion pack' is also on the way for those who prefer a 7.1-channel setup.

HCC ONLINE...

Looking for breaking AV news, blogs, features, & reviews? For your daily fix visit us at www.homecinemachoice.com Follow us on Twitter @hccmag

Making the grade

Panasonic DX900 LED TV → www.panasonic.co.uk



Launching this Spring in 65in/58in screen sizes, Panasonic's THX-certified DX900 LED 4K TV is described as 'the world's first official Ultra HD Premium TV', having met new picture performance standards (luminance, colour gamut, resolution, etc) set by the inter-industry Ultra HD Alliance. The screen employs 'Honeycomb' structure local-dimming technology, which Panasonic says ensures it can deliver the high brightness associated with HDR without compromising black levels. Also due on shelves this Spring is the DMP-UB900, the company's debut Ultra HD disc-spinner.

Panasonic's Ultra HD Blu-ray deck offers dual HDMI outputs for split audio/video



Auro-3D goes musical



Auro and record label Sono Luminus have partnered to release the album *Serious Business* by classical noodlers

Spektral Quartet in the Auro-3D format. Arriving on January 29 on Pure Audio Blu-ray, it will feature standard stereo and 5.1 mixes as well as the next-gen version with its height layer. The album was recorded in Auro-3D. Says Wilfried Van Baelen, Auro-3D inventor: 'With this album, and many more recordings and movie titles to come, we are looking forward to 2016.'

www.auro-3d.com

McIntosh aims high



US audiophile marque McIntosh is gearing up to rock high-end cinema

rooms with its latest AV processor. Replacing the existing MX151, its new 11-channel MX160 separate will set you back £14,000 and is available to order from UK distributor Jordan Acoustics. While it might look like something straight out of the 1950s, the MX160 is packed with leading-edge AV features including 4K upscaling and passthrough with HDCP 2.2 compatibility, Atmos and Auro-3D support, plus HDBaseT functionality.

www.jordanacoustics.co.uk

Style and substance



Add a splash of Italian style and luxury to your late-night listening with the aid of headphone brand PRYMA.

The company's first product, the PRYMA 01, has been engineered by sister company Sonus faber and boasts a design inspired by luxury Italian fashion. So, in addition to the circumaural design and 2 x 40mm drivers with Mylar diaphragms, these customisable 'phones feature interchangeable leather headbands with belt-style buckles. Five colour options are available, with prices starting at £380.

www.absolutesounds.com

LG upgrades WebOS platform

And will debut Ridley Scott-produced OLED ad during Super Bowl 50

LG has announced it is continuing with its popular WebOS smart TV platform on its 2016 flatscreen range, but as a 3.0 version with new features to improve the user experience and content selection.

A major change of WebOS 3.0 concerns channel selection. Channel Plus (described by LG as a 'unique' feature) integrates OTT content with familiar broadcast channels in unified listings. Net-delivered fare therefore appears while channel surfing in the traditional way. Content from the likes of BuzzFeed, Condé Nast Entertainment and Time Inc. are set to join.

Additional updates include a new Music Player app that will play tunes through an LG smart TV's speakers even when the TV screen is off; a multi-view feature that allows two different channels, or a channel and a BD, to be watched simultaneously; and onscreen control of smart home appliances that are compatible with LG's IoT system.

And the company is sticking firm to its belief that we all want a little wizardry in our lives. WebOS 3.0 offers three 'magic' smart features: Magic Zoom (magnifying objects/text 'without any degradation



Ridley Scott: 'When I first saw OLED TV I was mesmerised by its staggering picture quality'

in picture quality'); Magic Mobile Connection (access mobile apps on the screen) and an upgraded Magic Remote, designed to work better with set-top boxes.

'With enhanced options and more content, WebOS 3.0 continues to offer the key features that made WebOS so loved,' says the Korean corp.

Touchdown!

In a sign that LG hopes 2016 will be a big year for OLED, it has booked an advertising slot to run during Super Bowl 50 on February 7 to promote its state-of-the-art screen technology, and roped in Ridley Scott's production company, RSA Films, to craft it. It will be the first time LG has dug into its piggy bank to bag one of the coveted (and very expensive) ad spots during America's showpiece sporting event.

While Ridley is in the producer's chair, his son Jake Scott has directed the ad. Of course, the senior

member of this father and son team has Super Bowl form, having helmed the iconic George Orwell-inspired Apple Macintosh personal computer ad way back in 1984. And he has naturally hitched his wagon to the OLED star: 'When I first saw OLED TV, I was mesmerised by its staggering picture quality,' reckons the *Alien* director.

LG currently sells two ranges of OLED TV in the UK – the flat EF950V series (see page 44) and the curved EG960V models. More will launch this year.

WebOS 3.0 makes channel-surfing even easier



PLAYLIST...

Team HCC spins up its disc picks of the month

Ant-Man 3D (All-region BD)

Marvel's smallest superhero turns out to be a huge hit on 3D Blu-ray thanks to the film's impressive use of stereoscopic imagery and dynamic sound design



Star Wars: Battlefront (Xbox One/PS4/PC)



The release of a free DLC adding a map from *The Force Awakens* and patches to fix balance issues ensure the Force is strong in this game

The Wolfpack (Region B BD)



Fascinating documentary about seven kids whose only contact with the outside world came through watching and remaking films...

Last Embrace (Region B BD)



A handsome hi-def package for this bonkers 1979 thriller from Jonathan 'Silence of the Lambs' Demme

Spy (Region A/B BD)



Rude, crude and extremely funny, this espionage comedy proves a master at tickling ribs. And it looks pretty damn great in hi-def, too

EXTRAS...

Small items that could make a big impression

Alien Next Door



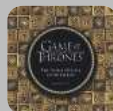
'In space, no one can hear you clean' runs the tagline on Joey Spiotto's charming fake children's book that reveals the softer side of H.R. Giger's legendary screen monster. From stocking fridges with milk for Jones the cat to returning Newt's decapitated doll, Spiotto's cheerful illustrations are sure to leave a smile on the face of franchise fans. Yours for £9.99.

Charlie Chaplin statue



Invite one of the most iconic figures of silent cinema into your home theatre with this brilliant 10.2in polyresin recreation of Chaplin's The Tramp. Produced by Infinite Statue, it's available via Sideshow Collectibles for around \$200.

Game of Thrones: The Noble Houses of Westeros



Need to brush up on your *Game of Thrones* knowledge before Season 6 hits TV? Then make sure to pick up this indispensable guide to all of the major players in the battle for the Iron Throne, their family histories and affiliations. Get it for £9.99 from www.hboshopecu.com.



Bose boosts multiroom range

SoundTouch adds Bluetooth, plus soundbars and an all-in-one system

Having already made a splash in the multiroom arena with its Wi-Fi-based SoundTouch speakers, Bose is upping the ante with the addition of Bluetooth connectivity and Spotify Connect to its products. The brand is also making multiroom compatibility a standard feature across its range of soundbars and all-in-one systems.

Bose's UK training manager Dan Baines told *HCC* that Bluetooth has been added to give customers more flexibility as, unlike Wi-Fi, it requires no setup. However, 'Bluetooth isn't always great for home listening,' he cautions, 'whereas Wi-Fi can stream to multiple speakers, either simultaneously or you can send different tracks to different speakers.'

Bose has also incorporated Spotify and Deezer into the control app. 'If a customer comes home listening to something on Spotify on a phone they can press a button and connect to our speakers seamlessly,' explains Baines.

Bose has retained two of its distinct advantages from its SoundLink line – preset buttons for radio stations, artists, tracks or playlist and the provision of a physical remote control. With FLAC and ALAC

compatibility, plus DLNA, all that the system arguably lacks for universal appeal is hi-res audio.

Soundbars and systems

New on the AV front is the £1,000 SoundTouch 220 – a 2.1 system – and the SoundTouch 120 (also £1,000), which marries a 43cm-long soundbar to a subwoofer. Unlike most manufacturers, Bose likes to keep the electronics separate from the speaker cabinets and subsequently all its models have a dedicated control console.

A step-up 'bar/sub model is the £1,400 SoundTouch 130. Here, the 94cm soundbar offers greater (albeit unspecified) power, six 'precisely positioned' drivers and two PhaseGuide sound radiators. It also features FlexMount technology, which adjusts sonic output according to the whether the 'bar is wall-mounted or on a tabletop.

Also on the SoundTouch ledger is a 5.1 option, the £1,400 SoundTouch 520, which swaps the soundbar of the 130 system for four 18cm satellites and a dedicated centre speaker.

All models are available now.



Platinum range revamped

Monitor Audio launches new family of flagship home cinema speakers

Monitor Audio has launched a new Platinum family of flagship loudspeakers. Consisting of three floorstanders, one bookshelf, two centres and a subwoofer, the Platinum II range is described as 'the most accurate and beautiful speakers' the brand has ever cooked up.

For the first time ever in a Monitor Audio speaker, the new flagship lineup deploys an MPD (Micro Pleated Diaphragm) high-frequency transducer. This is supported by new-look RDTII bass/mid-range drivers, improved crossover design and bespoke speaker terminals milled from solid copper with Rhodium-plated conductor parts.

Running from left to right in the image below, the range consists of the PLC150 II (£2,100) and PLC350 II (£3,150) centres; the PL100 II standmount monitor (£3,150 p/pr); the PL200 II (£6,300 p/pr) and PL300 II (£8,000 p/pr) floorstanders; the PL500 II flagship seven-driver tower (£15,000 p/pr); and the PLW-215 sealed twin 15in active sub (£3,500).

The Platinum II speaker range is scheduled to hit the UK in February.

'Accurate and beautiful speakers'



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DIARY

Our calendar ensures that you don't miss out...

→ JANUARY

22: The Assassin

Shu Qi stars in this award-winning martial arts movie about a female assassin sent to kill the military governor she was once betrothed to. Hunt it down at UK cinemas. www.studiocanal.co.uk

25: Bad Boys I & II

The prayers of action junkies will be answered today as Sony Pictures finally unleashes *Bad Boys II* in the UK as part of a '20th Anniversary Collection' double-pack alongside a remastered version of the first film. www.sonypictures.co.uk

→ FEBRUARY

01: The Walk 3D



This dramatic retelling of a 1974 attempt to wire walk between the Twin Towers of the World Trade Center promises a vertiginous

stereoscopic experience when it hits 3D Blu-ray today. 'Flat' DVD and Blu-ray versions are also available. www.sonypictures.co.uk

04: Deadpool

This action-packed, fourth-wall-breaking spin-off from the *X-Men* films stars Ryan Reynolds as the titular 'merc with a mouth'. Catch it at cinemas from today. www.fox.co.uk

05: Dad's Army

The classic BBC sitcom following the exploits of the Walmington-on-Sea Home Guard gets the movie remake treatment with an impressive cast that includes Toby Jones, Bill Nighy and Catherine Zeta-Jones. www.universalpictures.co.uk

08: Pan



Add some magic to your home cinema as this origin movie for J.M. Barrie's 'boy who wouldn't grow up' flies onto BD (2D and 3D) and DVD. www.warnerbrothers.co.uk

09: Integrated Systems Europe

Amsterdam's RAI convention centre hosts the annual four-day trade show dedicated to professional AV and smart tech integration. www.iseurope.org

18: HCC #257

The next issue of your favourite home cinema magazine hits the stands today packed with hardware tests, features, outspoken opinion and software reviews. www.homecinemachoice.com

Atmos hits the dance floor

Dolby debuts immersive 3D audio system at the Ministry of Sound

Dolby Atmos isn't just for movies and TV shows. The object-based sound technology has found a new home on the dance club circuit. London's celebrated Ministry of Sound has become the first venue in the world to install Atmos audio technology, and it sounds remarkable.

When it comes to movies, Dolby Atmos allows individual items to be steered with precision around a soundstage. The renderer in an Atmos decoder, be it theatrically or in the home, then replicates the soundmix based on the listening environment. In its nightclub guise, Dolby Atmos allows a DJ to pan audio dynamically in real time. Multiple stems of music can be washed in any direction around a venue, creating a unique listening experience. HCC enjoyed an exclusive preview of the new sound system at the Elephant & Castle venue, and can report that while it sounds quite unlike its theatrical equivalent, it's every bit as exciting.

The Dolby-equipped box at Ministry of Sound (dubbed 'Ultrasound' by the club) features 60 speakers, 22 channels and a synchronised lighting system. The Atmos residency begins on January 23, with a three-hour set by Hospital Records. It's the first in a series of events which promises clubbers a lineup of electronic artists and DJs (including London Elektricity, Reso and TC) who will use Atmos to create an immersive experience.

Music sounds better with you

Tired of throwing shapes on the dance floor, HCC caught up with Gabe Cory, Product Manager for Dolby Atmos Music at Dolby. Discussing how the idea got started, Cory revealed: 'We began to get calls from artists who wanted to get involved with

Dolby Atmos, so we started



Lohan Presencer: 'Dolby Atmos allows our patrons to experience the future of dance music... It's simply breathtaking!'

working corroboratively to work out how our technology fits into music.'

Celebrated muso DJ Yousef says the resulting software is a revelation. 'I tried doing an album in 3D audio a couple of years ago, but it was a real struggle to get it out of the studio and into the club environment. With Dolby Atmos DJ software, it's really easy. I found I could rework my stereo stems into Dolby Atmos in just 20 minutes – I was amazed.'

'What we've done is effectively unlock the speakers,' explains Cory. 'We can send music to all the speakers in the usual way – the kick, the bass, the drums – but we can also take individual elements and sounds that we want to spread out and move. We have the ability to remix on the fly.'

Lohan Presencer, CEO at Ministry of Sound, says he was intrigued when Dolby first presented the idea. 'For our 25th anniversary in 2016, we wanted to raise the bar even higher. Dolby Atmos allows our patrons to experience the future of dance music, creating multidimensional soundscapes the likes of which have never been heard before in a nightclub environment. It's simply breathtaking.'

Right here, right now

When it comes to wider availability of the Atmos music software, Dolby says only that it will be announcing more details soon. 'In the meantime, we're just focusing on our residency at the Ministry of Sound.'

The system currently allows two decks to be mixed in Atmos. However, in a move sure to annoy some DJs, there's no support for vinyl as yet.



When will the Atmos bass drop? Only DJ Yousef knows for sure...

This month's top 10 news stories in handy, bite-sized chunks...



1 Denon readies DTS:X update
Denon has confirmed that the long-awaited DTS:X firmware upgrade for (some of) its compatible AV receivers is almost here. The first model to get the DTS:X upgrade will be the Denon AVR-X7200WA (and AVR-X7200W), with the firmware set to launch on January 28. Updates for the AVR-X6200W (pictured) and AVR-X4200W will follow on February 18. DTS:X firmware for other models will 'follow later in 2016.'

2 Panny adds more Play
Panasonic has given its 2015 range of PVRs and Blu-ray recorders a Freeview Play upgrade via a firmware tweak. The models in question are the DMR-BWT850, DMR-PWT655 (see p68), DMR-PWT550, PMR-HWT250 and DMR-HWT150. Freeview Play is already available on Panasonic's 2015 TV lineup.

3 BT adds more 4K content
Clearly not satisfied with being the first UK TV service to offer a dedicated 4K/Ultra HD channel, BT has now become the first to deliver Netflix 4K content directly from its set-top box. 'We're delighted to be offering our customers a wide range of incredible Ultra HD content with the convenience of a single bill,' says Delia Bushell, MD of BT TV and BT Sport.

4 Oppo launches CI deck
Oppo has launched a Blu-ray transport designed specifically for the custom install market. The BDT-101CI utilises a modular design that allows qualified installers to upgrade the basic stereo model with optional extras including a 7.1-channel add-on, a second HDMI output board and even an HDBaseT module.

5 British film pirates jailed
Five UK men have been jailed for a total of 17 years after a private prosecution brought by FACT (the Federation Against Copyright Theft). The men accepted that they'd each cost the film industry nearly £1m after uploading over 2,500 movies that were downloaded 'millions' of times.

6 Sky turns Shield on
Having previously been available as an opt-in function, Sky is adopting a 'Default On' approach to its Broadband Shield parental controls for new Sky Broadband users this year. As a default the age filter will be set at 13 when a new Sky Broadband account is activated, switching to 18 after 9pm. The settings can subsequently be changed by the account holder.

7 Ready to rock...
First teased at last year's CES tech expo, Onkyo's Iron Maiden-branded headphones (ED-PHON3S) finally went on sale in December. Priced around £200 and available exclusively through Richer Sounds in the UK, the on-ear cans were designed and tuned by Iron Maiden bassist and founder member Steve Harris, specifically for listening to rock and metal music.

8 Trouble at Toshiba
Japanese consumer tech giant Toshiba is predicting a record ¥550bn annual loss and has revealed that it will be cutting 6,800 jobs as part of a restructuring plan. The news follows the recent revelation that the company had overstated its profits by around ¥151.8bn over a period of several years.

9 All you need is streaming
There was plenty for music fans to celebrate over the festive season as The Beatles' legendary discography was finally made available to nine streaming services: Amazon Prime, Apple Music, Deezer, Google Play, Groove, Rhapsody, Slacker, Spotify and Tidal.

10 The Force has awoken
To the surprise of absolutely nobody, *Star Wars: Episode VII – The Force Awakens* has broken the record for the biggest US opening weekend of all time. The record had already been broken earlier in 2015 by *Jurassic World*, which took a spectacular \$208.8m on its first weekend. However, ...*The Force Awakens* smashed that with takings of around \$238m. The new *Star Wars* sequel has also set a new IMAX global record, grossing \$48m worldwide across some 677 screens during its first weekend on release.



PREMIERE

What's happening in the world of TV and films...

Father of the Galaxy

Reports indicate that Kurt Russell is director James Gunn's top pick for the role of Chris Pratt's father in *Guardians of the Galaxy: Vol. 2*. The blockbuster sequel is set to hit UK cinemas on April 28, 2017.

Who's yer Mummy?



Sources claim that *Kingsman: The Secret Service* actress Sofia Boutella is in talks to play the title character in Universal's upcoming reboot of *The Mummy*. Arriving in March 2017, the film is planned as the first in a series of interconnected monster movies.

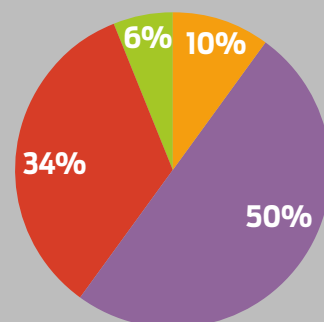
Toy stories

Following their success with the *Transformers* films, Paramount and Hasbro have revealed plans to give even more '80s toys a cinematic makeover. *M.A.S.K.*, *Visionaries*, *ROM* and *Micronauts* will all be joining *G.I. Joe* on the bigscreen as part of (you guessed it) ... 'an interconnected, cross-property onscreen universe.'

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Blu-bloods

Game of Thrones: The Complete Fifth Season
All-region BD & R2 DVD → HBO Home Entertainment

Winter is coming a little later than usual this year, with the latest DVD/Blu-ray release of HBO's *Game of Thrones* shifting from its traditional mid-February release to March 14. The fifth season's 10 episodes are accompanied by a treasure trove of extras, including 12 chat tracks, behind-the-scenes featurettes and a guide to new characters and locations, plus a handful of Blu-ray exclusives (interactive *In-Episode Guides*, *Histories and Lore* vignettes and a look at the story behind the Targaryen civil war). No news yet on whether the Blu-ray will offer Dolby Atmos audio, or if it's being saved for a subsequent limited edition re-issue as with the previous seasons...



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AVForums, Best Buy, January 2016

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SKY Q

what you need to know

This year sees the launch of a new premium eco-system for Sky. But what is Sky Q, and is it the answer to your AV prayers? **Mark Craven** reports



SKY Q IS the biggest overhaul of Sky's satellite TV platform in a decade, introducing new hardware in addition to features and functionality. For existing Sky fans it's exciting

stuff, and it may also appeal to those AV-Holics who have until now opted for their broadcast TV and movie thrills elsewhere, be it FTA, cable, or video-on-demand. Teased before Christmas, Sky Q is due to launch in the UK soon. Here's what you need to know.

1. There are choices to be made

As a completely new product line, Sky Q lands with three flavours of set-top box. These are the Sky Q Silver, the Sky Q and Sky Q Mini, and there are key differences between them.

The flagship model is the Sky Q Silver (although we suppose the nomenclature has left the door open for a Sky Q Gold somewhere down the line...), which features a dozen tuners and 2TB hard disk drive. The standard Sky Q drops the number of tuners to eight and HDD space to 1TB. More on what all those tuners are for below.

Both these are designed to function as the main box in a Sky Q household, like a regular Sky+HD box. The Sky Q Mini, on the other hand, is a multiroom box and features no in-built tuners or hard drive.

2. It's 4K ready

While far from the headline feature of Sky's new offering, home cinema owners will be pleased to hear that Sky Q is ready for a 4K world, although some details remain sketchy. What's confirmed is that the Sky Q Silver will come to market armed

with a 4K-capable HDMI output (and associated HDCP 2.2 copy protection chops). Later in the year, as yet unspecified 4K content will appear, covering 'sports, films and entertainment'. We'd be surprised if Premier League football, new-release Hollywood blockbusters and big-budget dramas aren't part of that – after all, Sky has delayed 4K content to the point that BT Sport Ultra HD has stolen its thunder. It's likely to fight back with a bang.

However, the Sky Q Mini and Sky Q only have HDMI v1.4 ports, and will not play UHD ball. This is understandable considering that 4K remains a step-up proposition for many UK consumers, but does leave those with more than one 4K TV in their house feeling a little unloved.

On the flagship Sky Q Silver, five of its dozen tuners are used for main room recording/TV viewing



A possible venture for Sky once its 4K content is available would be to integrate it into its broadband-delivered Now TV service. This would, of course, require a new Now TV box, and is star-gazing at the moment – we asked Sky whether such a move might develop and was told that 'further information on Sky's Ultra HD offering will be available closer to its release in 2016...'

3. Recording clashes should be a thing of the past

So the Sky Q Silver box features 12 tuners – to put that into perspective, the current Sky+HD has just a pair. Of these, five are there for you to play with in association with your main screen. Essentially, this means you can record four shows while watching a fifth, consigning clashes to the dustbin, but perhaps leading to rapidly filling hard drives. You may never need that many, but with cable rival Virgin featuring three tuners and the PVRs from Humax (Freeview Play) and EE TV sporting four, it's a welcome move.

The step-down (non-4K ready) Sky Q PVR allows three channels to be recorded and a fourth watched.

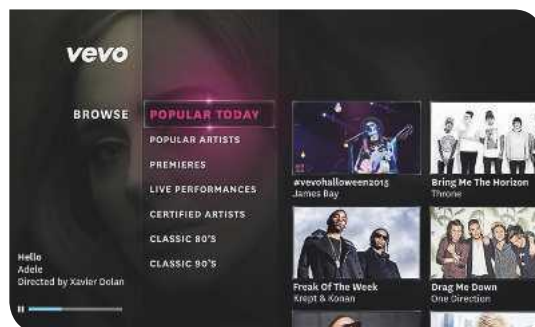
4. Those other tuners enable 'Fluid Viewing'

Fluid Viewing is the term coined by Sky's marketing department to describe Sky Q's multiroom, multi-device approach and cable-free simplicity. It's being touted as a killer feature.

Whereas a current Sky multiroom installation – a Sky+HD box and two Sky Multiroom boxes, for instance – requires multiple feeds to a Sky dish, a Sky Q setup uses the additional tuners of the main box, either Sky Q Silver or Sky Q, to push content to a Sky Q Mini. The former can team up with two Minis, the latter just one.

Connection is either via Wi-Fi or Powerline networking (using your mains cabling in conjunction with the Sky Q Hub – see box out over the page). Once hooked up, a Sky Q mini will offer live TV, on-demand and access to content recorded on the central box. In essence, this makes a multiroom setup a much simpler proposition than before.

A second aspect of Fluid Viewing is that content, including recordings, can be streamed to tablets/smartphones on the same Wi-Fi network. Again, the Sky Q Silver can stream to two devices, while the Sky Q can support one. In total then, a Sky Q Silver can feed three TVs and two devices simultaneously, plus record four separate channels. Yowzer.



The system welcomes third-party content: Vevo ushers in a dedicated music-on-demand app

Another Fluid Viewing trick is to let you pause what you're watching on one screen and pick up where you left off on another TV or device.

5. You can take recordings with you

In addition to streaming to a portable device, Sky Q actually allows for recordings to be downloaded to the device for off-network viewing – this is, says the company, the 'number one requested feature from customers.' This won't be an option for every broadcast – rights issues will surely hamper such a free-for-all – but it's a nice option, and Sky seems confident that much of its content will be unleashed.

6. Third parties join the party

With the exception of its catchup apps, Sky has long been a walled garden when it comes to content, so it's interesting that Sky Q sees it opening doors to new partners. There are two big hitters here, YouTube and Vevo. The former brings the usual access to *Minecraft* capers and animal pratfalls and provides yet another reason to bypass the smart side of your flatscreen; the latter serves up music vids. There are also linkups with Red Bull Media House, Vogue and Wired, and more in the pipeline. There isn't, however, any sign of Netflix. An obvious omission, but one that will probably still annoy some people.

7. It won't bed down with your Sky+ kit

A Sky Q install sees you starting afresh. Existing Sky+ hardware will need to be ripped out (and all those HDD recordings waved farewell) when the engineer comes to fit a new LNB (necessary to feed the multi-tuner hardware) to your existing dish. >



New hardware from left to right – Sky Q Mini, Sky Q Silver and Sky Q Hub

AT THE HUB OF IT ALL...

Sky Q also features a new router with a hot talent



As well as the trio of set-top boxes, Sky Q's hardware includes the Sky Q Hub, a router with Powerline networking and dual-band Wi-Fi. Obviously, this is only available to Sky Broadband subscribers, and is a requirement if you want to connect to Sky Q set-top boxes via Powerline (a Wi-Fi connection will work with other ISPs and routers). Powerline isn't its only trick, though – the Hub also turns Sky Q boxes into Wi-Fi hotspots, improving coverage in your home and potentially letting you have that TV-in-the-garden-shed system you've always dreamed of.

For single-box owners this shouldn't be a downer – it's a straightforward upgrade – but for those with hardwired Sky multiroom setups it will mean all those boxes will need swapping. A Sky Q/Sky Q Silver won't mesh with secondary Sky+ boxes.

8. There's no sign of Dolby Atmos

Sky has a chequered history with surround sound. It has offered multichannel mixes on its content (particularly movies) for yonks, but until the Spring of 2013 this was only available over optical audio output and not HDMI.

The new hardware will support Dolby Digital 5.1 via HDMI. We had hoped, however, that Dolby Digital Plus might be specified, as this can be used to carry

'With Sky Q's ability to record four shows while watching a fifth, recording clashes should be a thing of the past'

Dolby Atmos metadata, paving the way for 4K movies with next-gen audio somewhere down the line. Yet Sky appears to have left such functionality on the shelf for the time being.

9. The beached whale design has gone

Modern PVRs are increasingly dinky and Sky Q is no exception. Out goes the slightly overweight aesthetic of Sky+ and in comes a slimmed-down upgrade. Top-panel buttonry has been removed, and the power button now incorporates the Sky Q branding. And what denotes a Sky Q Silver over the identically-sized 1TB sibling? A strip of silver, of course.

Both these PVRs measure 330mm across. The Sky Q Mini lives up to its name at 232mm wide and only 35mm high. It looks broadly similar to its bigger brothers.

10. There's a new UI and remote control

Sky has made piecemeal updates to its Sky+ user interface and EPG in previous years, but for Sky Q it is introducing a new UI and remote control. As you'd



An existing Sky+HD STB can't integrate with Sky Q hardware. Boo

expect, the aim here is to make finding relevant content easier, beginning with a revamped (and more image-oriented) homepage.

Subtle tweaks to this include renaming Planner as Recordings (an overdue change, really). More obvious developments concern recommended viewing. A new Top Picks section guides you towards what the broadcaster considers its key content (movie premieres, much-loved dramas), while My Q serves up suggestions based on what you have watched at different times of the day, plus your own recordings that you haven't finished watching (handy) and the latest episode of your favourite series.

The homepage also acts as a launch pad for Box Sets, Movies, Music, Sports, Kids and Sky Store options.

Steering all this is a new touchpad remote – cue wails of anguish from die-hard Sky fans used to the shape and design of its near iconic zapper. But there's more here than just the introduction of swiping and scrolling to peruse menus. Opting for Bluetooth transmission rather than RF means that line-of-sight is no longer needed to control the box. Similarly, if the remote is mislaid, you can press the Q button on the set-top box and the handset will start beeping. Other new features include a Search button, one-click series link setup, TV input selector and hot keys for the Sky News and Sky Sports News apps.

11. Bluetooth and AirPlay are onboard

An interesting new development – all three of Sky's STBs will work as Bluetooth and Apple AirPlay receivers. Not, perhaps, reason alone to rush out and upgrade, but Sky's logic – that many households have their best audio system wired up to their TV – is hard to argue with.

12. It's a premium product and will probably have a premium price tag

Sky Q joins, but doesn't replace, Sky+HD – for the time being, anyway. The company's product range will be three-strong – Now TV, Sky+HD and Sky Q.

Sky Q pricing has yet to be announced, and guesstimates are tricky due to the way Sky structures its packages depending on new/existing customers, broadband takeup, channel bundle and multiroom option. All we can say with any real certainty is that those who already have a Sky subscription (be it the basic Original Bundle or full-fat Complete Bundle) should expect an uptick in their fee if they move to Sky Q. And there will be associated hardware and installation costs as well. Despite this, home cinema owners desperate to gorge on flexible broadcast TV and 4K content will probably want to give Sky Q serious consideration ■



Both the home screen and remote control have had an overhaul, promising swifter and more intuitive navigation



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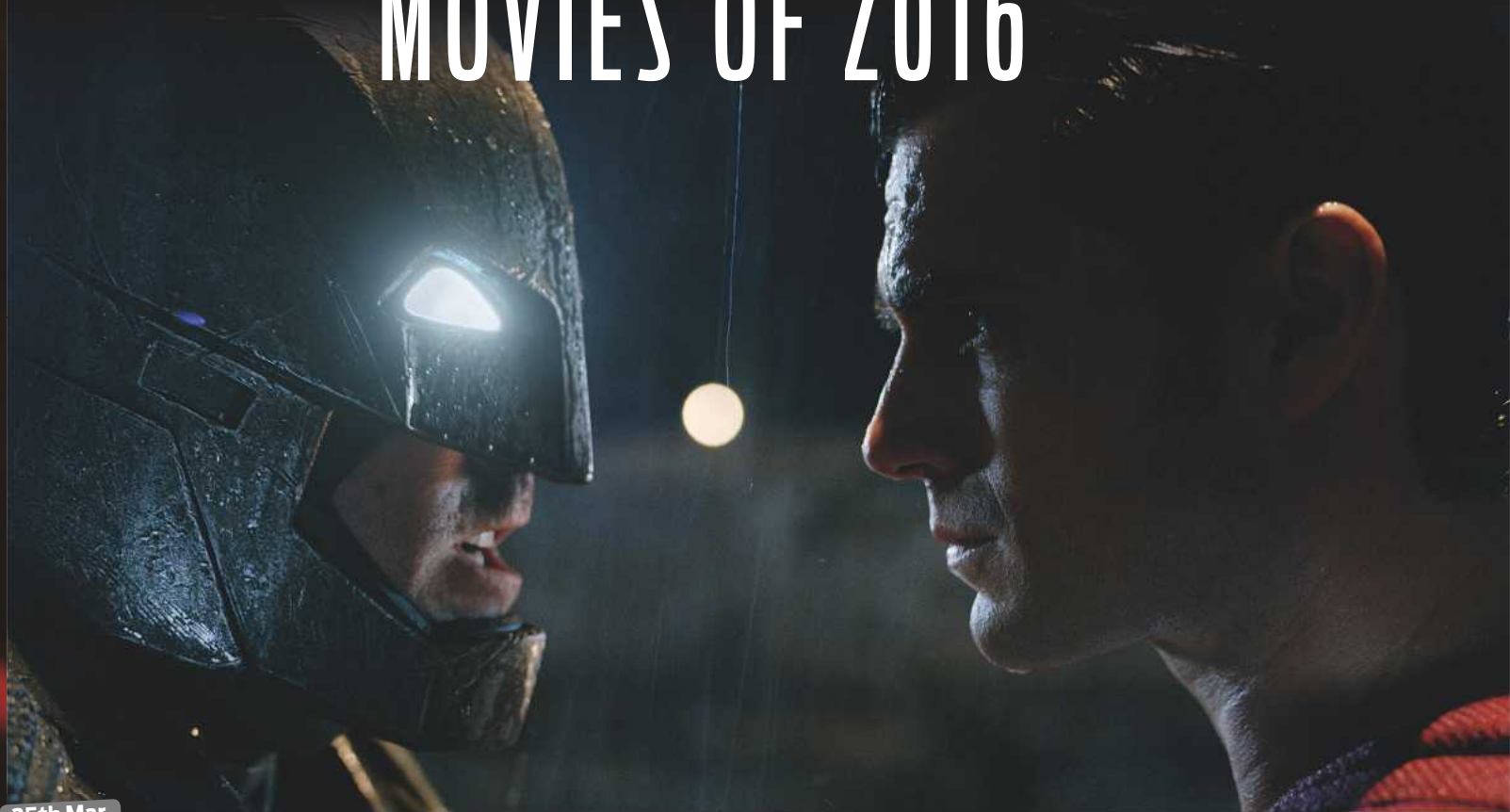
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Jurassic World, *Fast & Furious 7*, *Avengers: Age of Ultron* and *Star Wars: Force Awakens* made 2015 a bumper box office year for Hollywood. Can it repeat the trick in 2016? **Team HCC** casts an eye over its slate of hopeful hits

THE BIG MOVIES OF 2016

25th Mar

BATMAN VS SUPERMAN: DAWN OF JUSTICE

What's it about? The Caped Crusader and The Man of Steel finally share screen time in a superhero mashup that sees them battle each other before joining forces...

Why are we excited? Because this is huge, in so many ways. A movie featuring cinema's most recognisable superheroes (one dark, the other light) has been rumoured for years – now, thanks to

executive producer Christopher Nolan and director Zack Snyder, it's actually happening. *Batman vs Superman...* also marks the first step in DC Comics/Warner Bros' re-invigorated attempt to challenge rival studio Marvel as the king of comic book movies. Add to all of that the first guest appearances of fellow superheroes Wonder Woman, Aquaman, Cyborg and the Flash and it's full steam ahead for the 'DC Extended Universe'.

16th Dec

ROGUE ONE: A STAR WARS STORY

What's it about? Prequel/spin-off from the mega sci-fi franchise with a group of rebel fighters banding together to steal the blueprints for the Death Star.

Why are we excited? *Rogue One* will be *Star Wars*, but not as we know it. Free to run wild in the universe created by George Lucas unfettered by ties to Anakin, Luke, Yoda *et al*, or the style of its parent movies, it may end up like *The Dirty Dozen* or *Ocean's 11* in space. Not knowing is part of the fun, although the presence of Gareth Edwards bodes well, as his previous movie *Godzilla* brilliantly mixed character-driven story and gripping action.



29th July

FINDING DORY

What's it about? A fish searching for its family, basically.

Why are we excited? Pixar's original *Finding Nemo* is an animation masterclass and excelled when it was rebooted in 3D for Blu-ray. This sequel, focusing on forgetful fish Dory, will feature more stereoscopic marine mayhem. Although the animation house has both impressed (*Toy Story 2/3*) and bored (*Cars 2*) with previous sequels, the presence of original *Finding Nemo* director Andrew Stanton (also *WALL-E*) has us hoping it makes quite a splash. And your kids will love it.



4th Mar

LONDON HAS FALLEN

What's it about? The US President is once again targeted by terrorists, this time while on a trip to the UK.

Why are we excited? Preceding movie *Olympus Has Fallen* (2012) was perfect Friday-night fodder – a bullet-strewn and surprisingly bloody actioner that gave Gerard Butler a chance to pretend he was *Die Hard*-era Bruce Willis. Butler and director Antoine Fuqua are back for this Blighty-based sequel, and they've been given a bigger budget. Judging from the early teaser trailer, most of it has been spent on blowing things up.



19th Feb

BONE TOMAHAWK

What's it about? Kurt Russell's Sheriff battles cannibalistic cave-dwellers in the Old West.

Why are we excited? 'Kurt Russell in a horror/Western' is a pitch that immediately sets juices flowing, and *Bone Tomahawk* looks likely to appeal to fans of both genres. As an independent movie, expect no punches to be pulled when it comes to splatter. Maybe queue it up as a double-bill with Quentin Tarantino's *The Hateful Eight* – Russell is wearing the same moustache, after all...



12th Feb

ZOOLANDER 2

What's it about? Idiot models/model idiots Derek Zoolander and Hansel team up to see off evil fashion designer Mugatu.

Why are we excited? *Zoolander* is one of the funniest Hollywood films in a generation and delaying a sequel by 15 years could be a masterstroke – the original now has cult status and there's a new world of selfie culture, YouTubers and social media to lampoon. Looks set to offer more belly laughs than AV bombast, but we don't care.



21st Oct

JACK REACHER: NEVER GO BACK

What's it about? The former military cop visits his unit's old HQ, but soon finds himself accused of murder...

Why are we excited? Despite being a foot shorter than the character in the source material (the series of thrillers by Lee Child), Tom Cruise proved a good fit for the role of *Jack Reacher* in the 2012 thriller of the same name. This second outing, actually based on the 18th book in the series, has Edward Zwick behind the camera. If the duo (who also worked together on *The Last Samurai*) can find the same mix of smarts and brawn, then we're along for the ride.



26th Dec

ASSASSIN'S CREED

What's it about? Based on the hit videogame series, the film follows the battle between the Assassins and Templars over two time periods.

Why are we excited? Movies based on videogames usually fill us with a sense of dread rather than excitement. Yet *Assassin's Creed* is shaping up to be something rather special, reuniting award-winning actors Michael Fassbender (who also produces the film) and Marion Cotillard with their *Macbeth* director Justin Kurzel. Given Kurzel's track record, the film promises to be a stylish and intelligent addition to the genre, albeit one with all of the parkour-style action that fans of the videogames know and love.



18th Nov

FANTASTIC BEASTS AND WHERE TO FIND THEM

What's it about? Eccentric wizard Newt Scamander lands in hot water in 1920s New York when a menagerie of dangerous creatures escape from his magical case.

Why are we excited? Inspired by the textbook that appears in the *Harry Potter*... novels, this spin-off gives series creator J.K. Rowling her screenwriting debut and is planned as the first instalment in what studio Warner Bros has called 'at least' a trilogy. Along for the journey is returning franchise director David Yates, plus actors Eddie Redmayne, Samantha Morton, Ezra Miller, Colin Farrell, John Voight and Ron Perlman. Hopefully it'll be magic.



22nd July

STAR TREK BEYOND

What's it about? Kirk, Spock, Bones and co. are stranded on a hostile planet after the Enterprise is destroyed by an unknown alien species.



Why are we excited?

After lensing four *The Fast and the Furious* sequels, Justin Lin takes his action director credentials into outer space. Fans want him to knock this franchise back into shape after 2013's disappointing *Star Trek Into Darkness* – yet the trailer has already upset some die-hard Trekkies with its bike stunts and Beastie Boys soundtrack. We say 'Who cares?' Maybe a dose of fun and inventiveness is just what *Star Trek Beyond* needs.



24th June

INDEPENDENCE DAY: RESURGENCE

What's it about? Nearly 20 years after alien invaders were sent packing from Earth, they're back, bigger and badder than ever.

Why are we excited? The original movie was an absolute blast; frothy fun with a superb ensemble cast, nifty SFX and one of cinema's iconic moments when alien craft moved into position above the world's biggest cities. This long-awaited sequel sees most of the players return for a second outing. Yes, Will Smith is absent, but director Roland Emmerich and writer Dean Devlin are back onboard, as is Jeff Goldblum as space boffin David Levinson. Get ready for galactic warfare and room-shaking sequences of mass destruction. Which is how we like it.

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5th Aug

SUICIDE SQUAD

What's it about? With Batman and Superman busy elsewhere knocking lumps out of each other, a secret government agency recruits imprisoned supervillains to undertake a dangerous black-ops mission.

Why are we excited? It's *The A-Team* with supervillains! Still not convinced? Well, this third instalment in the 'DC Extended Universe' is helmed by David 'Fury' Ayer and stars Will Smith and Margot Robbie (playing Deadshot and Harley Quinn, respectively) amongst its gallery of rogues and freaks. Speaking of rogues, *Suicide Squad* also features the first appearance of the DCEU incarnation of the Joker, played by Jared Leto. Looks like big-budget, garish, gaudy fun.



29th Apr

CAPTAIN AMERICA: CIVIL WAR

What's it about? Political and ideological tensions tear the Avengers gang apart as Cap leads a group of rogue heroes against Iron Man and his government-sanctioned chums.

Why are we excited? Taking its cues from one of the biggest Marvel comics of recent years, this third *Captain America* movie is basically *Avengers 2.5* in all but name. Featuring a huge roster of favourite characters (including Black Panther and our first look at the all-new Spider-Man) and directed by the duo responsible for the superb *Captain America: The Winter Soldier*, this could well end up as Marvel's biggest hit to date. And don't forget about the studio's *Doctor Strange*, which follows on 28th October.



19th May

X-MEN: APOCALYPSE

What's it about? Professor X and Mystique assemble a new team of young mutants in order to save the world from the ancient baddie Apocalypse.

Why are we excited? Director Bryan Singer's *X-Men: Days of Future Past* saw Fox's franchise firing on all cylinders and we've no reason to expect anything less from his follow-up. Joining James McAvoy, Michael Fassbender, Jennifer Lawrence *et al* this time are Sophie (Game of Thrones) Turner as Jean Grey, Oscar (The Force Awakens) Isaac as the titular baddie and Olivia Munn as ninja telepath Psylocke (left).



12th Feb

PRIDE + PREJUDICE + ZOMBIES

What's it about? As the title suggests, this is yet another adaptation of Jane Austin's celebrated novel, only this time with added zombies.

Why are we excited? It's taken a long and twisted route to the silver screen, but this adaptation of the bestselling 2009 parody book should prove worth the wait. Not only does this horror comedy look genuinely funny, it also promises plenty of action as feisty zombie-slayer Elizabeth Bennet (Lily James) and the aloof Mr. Darcy (Sam Riley) wage war on the undead and fall in love with each other in the process. And who knows? If it's a hit, maybe we can look forward to an adaptation of *Sense and Sensibility and Sea Monsters* next...



11th Mar

KUNG FU PANDA 3

What's it about? When an ancient evil sets about stealing the powers of kung fu masters, Po must transform a village of clumsy pandas (including his biological father) into a fighting force to be reckoned with.

Why are we excited? Along with *How to Train Your Dragon* and its sequel, the adventures of cuddly kung fu master Po and the Furious Five continue to be DreamWorks' most enjoyable cartoons. They're beautiful to look at and laced with sharp humour. Plus, *Kung Fu Panda 3* has been mixed for theatrical release in Dolby Atmos – when you remember the dynamic and immersive Dolby TrueHD soundmixes that greeted its two predecessors on Blu-ray (and that ferocious LFE!) this sounds like very good news indeed.

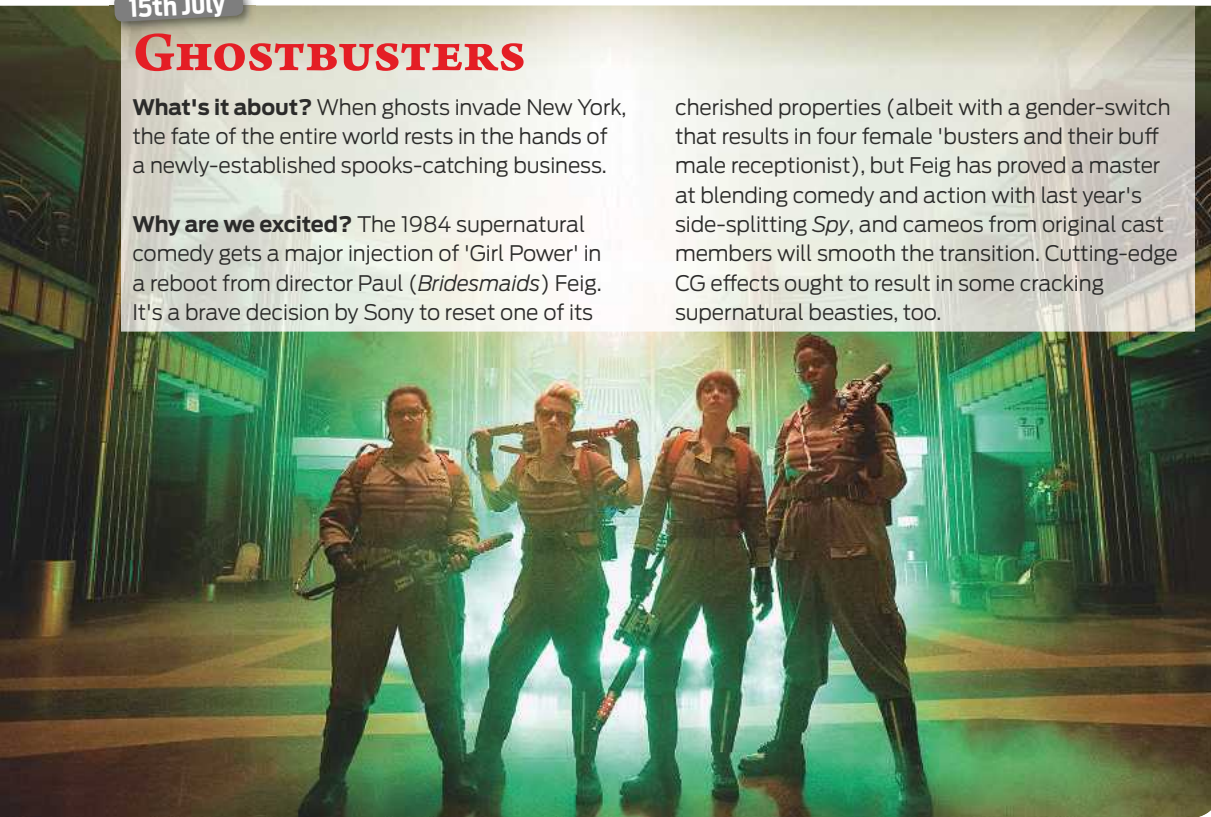
15th July

GHOSTBUSTERS

What's it about? When ghosts invade New York, the fate of the entire world rests in the hands of a newly-established spooks-catching business.

Why are we excited? The 1984 supernatural comedy gets a major injection of 'Girl Power' in a reboot from director Paul (Bridesmaids) Feig. It's a brave decision by Sony to reset one of its

cherished properties (albeit with a gender-switch that results in four female 'busters and their buff male receptionist), but Feig has proved a master at blending comedy and action with last year's side-splitting *Spy*, and cameos from original cast members will smooth the transition. Cutting-edge CG effects ought to result in some cracking supernatural beasties, too.



AND ON TV...

Don't miss these shows making a 2016 debut

Westworld



Classic 1970s sci-fi flick morphs into a star-studded (Anthony Hopkins, Ed Harris) HBO TV show that'll land on Sky Atlantic. J.J. Abrams is in the producer's chair.

The X-Files

Mulder and Scully return for a revival of the much-loved sci-fi series. Channel 5 has won the bidding war to screen the six-part 'TV event' in the UK.

Legends of Tomorrow



Spinning off from DC's *Arrow* and *The Flash* series is this ensemble comic caper. Brandon Routh, who once played Superman, takes on the role of The Atom. Another one bagged by Sky Atlantic.

Vrrrooom

Okay, 'Vrrrooom' is probably not the name of the Jeremy Clarkson, James May and Richard Hammond petrolhead series debuting on Amazon Instant this year. But we know it won't be called *Top Gear*.

Marvel's Luke Cage

The third in Netflix's Marvel series deal (following *Daredevil* and *Jessica Jones*) will stream in UHD and feature Mike Colter as the brawny superhero.



29th July

BOURNE 5

What's it about? Your guess is as good as ours – even the title is still top secret. All we know for sure is that Jason Bourne is back!

Why are we excited? Having been M.I.A. for the underwhelming *The Bourne Legacy*, this fifth film in Universal's series of kinetic, intelligent thrillers brings Matt Damon in as former CIA assassin Jason Bourne. Director Paul Greengrass also returns – and it was his distinctive hand-held style that gave *The Bourne Supremacy* and *The Bourne Ultimatum* so much energy and immediacy. Fans will hope that the mystery surrounding the movie doesn't hint at production issues and that Universal is merely striving to create a buzz. Fingers crossed that, whatever this ends up being called, it can give the last couple of Bond films a run for their money.



18th Mar

HIGH-RISE

What's it about? A luxury tower block descends into violence when the inhabitants start forming tribes and attacking each other.

Why are we excited? 'Later, as he sat on his balcony eating the dog, Dr. Robert Laing reflected on the unusual events that had taken place within this huge apartment building during the previous three months'. So runs the opening to J.G. Ballard's dystopian sci-fi novel *High-Rise*, which now becomes a mid-budget Brit flick 41 years after its publication with indie fave Ben Wheatley at the helm. While unlikely to prove as controversial as David Cronenberg's Ballard adaptation *Crash*, this is lined up to be a shockingly violent and darkly funny satire of contemporary civilisation – hence its March release date to keep it away from the Summer cinema crowd.



22nd July

THE BFG

What's it about? A young orphan girl teams up with a 'Big Friendly Giant' to stop other giants from munching on children.

Why are we excited? One of the world's biggest filmmakers – Steven Spielberg – adapting a story by one of the world's greatest authors of children's books – Roald Dahl – sounds like a masterplan. Why? Because with *E.T. the Extra-Terrestrial* and *Jurassic Park* Spielberg has shown he's easily capable of finding the ideal balance between child-worrying menace and underlying sentiment that sits at the heart of Dahl's writing. And, although he's previously directed the *Tintin* animation and overseen the 2D-3D conversion of *Jurassic Park*, *The BFG* will be his first live-action 3D movie. We're looking forward to donning the silly spex for this one.

15th Apr

THE JUNGLE BOOK

What's it about? When the tiger Shere Khan threatens his life, Mowgli the man-cub must escape from the jungle with the aid of Baghera the panther and Baloo the bear. Ooh-ooh-ooh!

Why are we excited? When Disney announced that it would be remaking some of its classic cartoons as live-action features, heads were scratched. But that was before Kenneth Branagh's brilliant *Cinderella* proved the idea really could work. And if anything, Jon Favreau's *Jungle Book* remake looks poised to be even better, backing up its state-of-the-art VFX with a cast including Scarlett Johansson, Idris Elba and Christopher Walken.



10th Feb

DEADPOOL

What's it about? Hoping to cure his cancer, former soldier Wade Wilson undergoes an experimental treatment that leaves him with superpowers... and an unhinged mind.

Why are we excited? Ryan Reynolds gets a second chance to do this fan-favourite anti-hero justice having previously played the part in the appalling *X-Men Origins: Wolverine*. This solo outing commits to being much more in keeping with the comic book source material, right down to the character's habit of breaking the fourth wall and directly addressing his audience. And, despite being an official spin-off from the *X-Men* movies (with an appearance from Colossus), studio Fox has allowed director Tim Miller to shoot for an 'R' rating – cue the OTT violence and foul-mouthed gags that *Deadpool* fans expect.



22nd Apr

THE HUNTSMAN: WINTER'S WAR

What's it about? Huntsman Eric takes on the combined might of the resurrected Evil Queen Ravenna and her cold-hearted sister Freya, the Ice Queen.

Why are we excited? This dark fantasy sequel to 2014's superb *Snow White and the Huntsman* adds Jessica Chastain (in place of Kristen Stewart's departed Snow White) as The Warrior and Emily Blunt as new icy villain Freya (right) to the cast. Trailers have teased a blend of show-piece action, swirly SFX, gorgeous imagery and a splash of gender politics.



3rd June

TEENAGE MUTANT NINJA TURTLES: OUT OF THE SHADOWS

What's it about? The 'Heroes in a Half-Shell' return to save New York from yet another threat.

Why are we excited? Outside of some choice Atmos demo scenes, the 2014 ...*Turtles* reboot was a bit of a dud. Good, then, that this sequel seems to be going out of its way to get fans' attention as it harks back to the 1980s animated series. The likes of Bebop, Rocksteady and even Krang are all popping up to give the Turtles trouble, while *Arrow*'s Stephen Amell will be giving them a hand as hockey mask-wearing vigilante Casey Jones. Cowabunga!



3rd June

WARCRAFT: THE BEGINNING

What's it about? The world of Azeroth stands on the brink of war as its human inhabitants face off against a fearsome race of orcs. Blimey.

Why are we excited? Having wowed with the sci-fi *Moon* (2009) and *Source Code* (2011), filmmaker Duncan Jones graduates to the world of blockbuster cinema with this fantasy based on the world's most popular MMORPG (Massively Multiplayer Online Role-Playing Game). Jones describes it as '*Game of Thrones* mixed with *Avatar*,' which sounds appetizing to us, and we're betting that it will look spectacular (legendary FX studio ILM is onboard). Theatrically it's getting an Atmos mix, so expect this (or a DTS:X variant) for the BD, too ■

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1. Aug 2015: Epson blind test between Acer H6510BD, BenQ TH681+, Epson EH-TW5200, Optoma HD26 and ViewSonic PJD7822HDL.
For further info on the test and on the 3x brighter colours data please see www.epson.co.uk/CLO

2. Survey conducted by Futuresource Consulting Limited for the period from 2001 to 2015.

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KIT CHECKLIST

SCREENLINE: 3m 16:9 fixed-frame projector screen (acoustically transparent)

EPSON: EH-TW9200 Full HD projector

SONANCE: 3 x LCR2 Cinema Series speakers; 2 x SUR2 Cinema Series speakers; 2 x VP65 in-ceiling speakers; 2 x SUB12 enclosed in-wall subwoofers

YAMAHA: CX-A5000 11-channel pre-amplifier; MX-A5000 11-channel power amplifier

APPLE: Apple TV

SKY: Sky+HD

SONY: Blu-ray player; PlayStation 4

CONTROL4: HC250 room controller; C4-TW7CO-BL in-wall touchscreen; SR250 handheld remote

PALLADIO: 3 x Napoli Double cinema seats; 3 x Napoli Single cinema seats

PRO AUDIO STASH: 32U AV rack

RAKO: Lighting control/dimming

ASHWAY: Hard-drive media player; RGB strip lighting



Sound of the underground

This basement theatre hides a 7.2 speaker array amidst all the glamour. **Mark Craven** reports

WHEN YOU'RE SEARCHING for space for a dedicated cinema room – always preferable to using your regular living areas if possible – a garage or loft conversion seems the most obvious idea. But how about digging down? That's what the owner of this screening room has done, and he's ended up with a smart-looking space that gives him the 'wow-factor' he was looking for.

Dubbed 'The Hole in the Ground' by installer Ashway Smart Homes, the room was a finalist (in the Home Cinema £40,000-£100,000 category) in last year's CEDIA Awards. And it's easy to see why it tickled the judging panel's fancy – it combines comfort, control and aesthetic charm with a potent audio system and a whopping screenwall.

Now, where to sit?

'As with all good home cinema projects, our solution started with the seating,' reveals Ashway's Shaun Hawkins. The owner had requested at least eight seats – the eventual config features nine (three doubles and three singles over two tiers). Once this was agreed the design and specification of the rest of the room could take shape, including screen size and speaker positioning.

The audio system (fully measured and calibrated once installed) mixes Sonance speakers with processing and power from Yamaha, in this case the flagship CX/MX separates. LCR enclosures, positioned behind the 3m acoustically transparent fixed-frame projector screen from Screenline (16:9 ratio), are Sonance's LCR2 models – three-way designs employing a quartet of bass drivers and a coaxial tweeter/mid-range unit. The surround enclosures are similarly specified, yet feature angled mid-bass drivers for wider dispersion. The rest of the seven-channel array is delivered by in-ceiling Sonance models, with cabling in place for more if the owner wants an Atmos upgrade down the line. In-wall subwoofers flanking the projector screen necessitated a precise studwall construction.

For control, a system from Control4 was installed to operate AV and lighting. The cinema room is also linked with further home automation tricks that were established in the house, all employing the same user interface. Custom-designed lighting scenes are setup for 'Welcome', 'Movies' and 'Gaming.'

An unusual demand came from the building inspector, who said that the system must turn itself off in the event of a fire – despite the fact that a linked fire sounder was to be installed. The solution was found by linking the output from the sounder to a dedicated relay, in turn connected to the Control4 system, which initiates a full shutdown.

Add in the Epson projector, discreet kit rack, multiple hi-def sources and eye-catching décor and you have a room with real appeal. Almost makes us want to break out the shovels... ➤

The room offers nine Palladio cinema seats for ultimate comfort



INSTALL INFO

A DRESSED UP TO THE NINES

Using a mix of double and single recliners, the room offers space for nine viewers

B LCD BEAMER

A rear-mounted Epson EH-TW9200 LCD projector handles hi-def visuals

C INVISIBLE SPEAKERS

In-wall Sonance enclosures keep the audio system hidden from view

D DOUBLE TROUBLE

Acting as master and commander of the AV system is Yamaha's high-end CX-A5000/MX-A5000 duo. This pre/power amp combi offers precise control over eleven 150W channels courtesy of the brand's YPAO room EQ suite

E LIGHTING THE WAY

Smart room lighting includes RGB strips in-wall and in the ceiling alcove – preset moods are programmed





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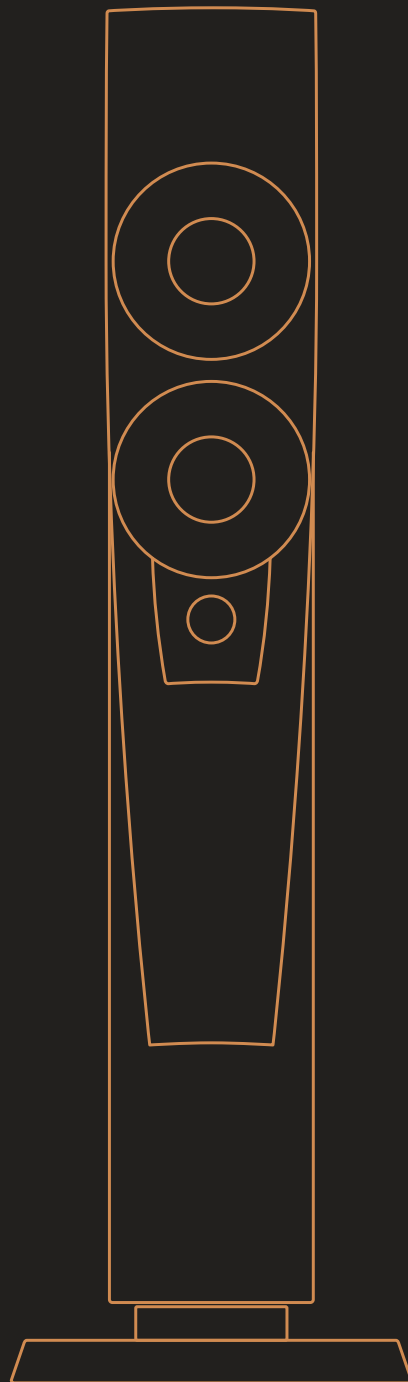
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REVIEWS

→ **HARDWARE** PANASONIC Flagship 65CZ952B OLED TV, plus BD player/PVR combi deck
 EPSON Affordable Full HD LCD projector JBL Floorstanding 5.1 speaker system APPLE Fourth-gen
 Apple TV LG 65EF950V OLED TV CAMBRIDGE AUDIO Soundbar/subwoofer duo ENTOTEM Hi-res
 audio/video server HISENSE Budget Ultra HD TV SAMSUNG 32in curved LED TV AND MORE!

Prince of Atmos?



Pioneer aims to claim the home cinema audio crown with its SC-LX89 receiver. See p40

HCC RATINGS KEY...

Outstanding	★★★★★
Above average	★★★★☆
Acceptable	★★★☆☆
Disappointing	★★☆☆☆
Dire	★☆☆☆☆

Panasonic's debut OLED TV has **John Archer** trying to rustle up a bank loan, sharpish

The best TV ever?

FOR MANY SERIOUS AV fans, OLED currently looks like the holy grail of TV technology, ready to usurp LED-lit LCD TV and light the way to a new era of home entertainment. If OLED doesn't excite you, then you may be reading the wrong magazine.

Both the touchpad and regular handset (below) enjoy a silver finish



Why is OLED a big deal? Because its self-emissive approach to crafting pictures follows plasma's example of enabling each pixel to deliver its own light and colour independent of its immediate neighbours. This allows for levels of contrast and colour precision that not even the most expensive and precise of today's LCD TVs can rival.

Yet for all its potential magnificence, getting OLED perfection in the homes of film fans has been thwarted by a combination of ultra-expensive prices and a few sporadic performance issues. Here, however, in the shape of the 65in 4K Panasonic 65CZ952B, I'm happy to say I've found an OLED TV that at least fixes the picture quality hiccups. Just don't mention the price...

Twice as nice?

Except, I guess, we have to. So here goes: this Panasonic flagship sells for around £8,000. Oof. That makes it not far off twice as expensive as LG's latest 65in 4K OLED TVs – including the 65EF950V elsewhere in this issue. It also makes it around four times as expensive as a pretty high-level 65in LCD set.

Search for justifications for the 65CZ952B's eye-watering price and you have to begin with its cutting-edge design. This combines an incredibly thin profile at its edges with a curved screen that makes flat TVs look, well, flat by comparison. The screen frame is remarkably narrow too, and it sits on a pedestal stand that leans artfully backwards so that you're barely >

WHEELY GOOD FUN

Mission Impossible: Rogue Nation hits BD, p100



AV INFO

PRODUCT:
65in 4K curved OLED TV

POSITIONING:
The only OLED TV in Panasonic's current range

PEERS:
LG 65EF950V;
Sony KD-75X9405C;
Samsung 65JS9500



The 65CZ952B combines a native 4K resolution with OLED display tech

aware it's there. The TV even sports a white Alcantara finish that covers much of its rear. How much value you get from this depends on how much time you spend looking at the back of your TV rather than the front.

A reasonably strong connections roster includes four HDMI, three USBs and Wi-Fi and LAN network options, plus feeds for both the set's Freeview HD and Freesat HD tuners. But exploring the multimedia options quickly makes you aware of a disappointment: there's no support here for Panasonic's 2015-era Firefox OS operating system. This seems pretty bizarre when you think that Firefox is found on sets far, far further down the pricing ladder, and apparently this can't be fixed by any future firmware update.

There's still support for the 4K versions of Netflix and Amazon Instant, but I certainly missed the slick helpfulness of Firefox. Plus you've got to think that the number of apps likely to appear on this OLED screen will be more limited than the number heading to Panasonic's Firefox TVs.

Pro-grade processing

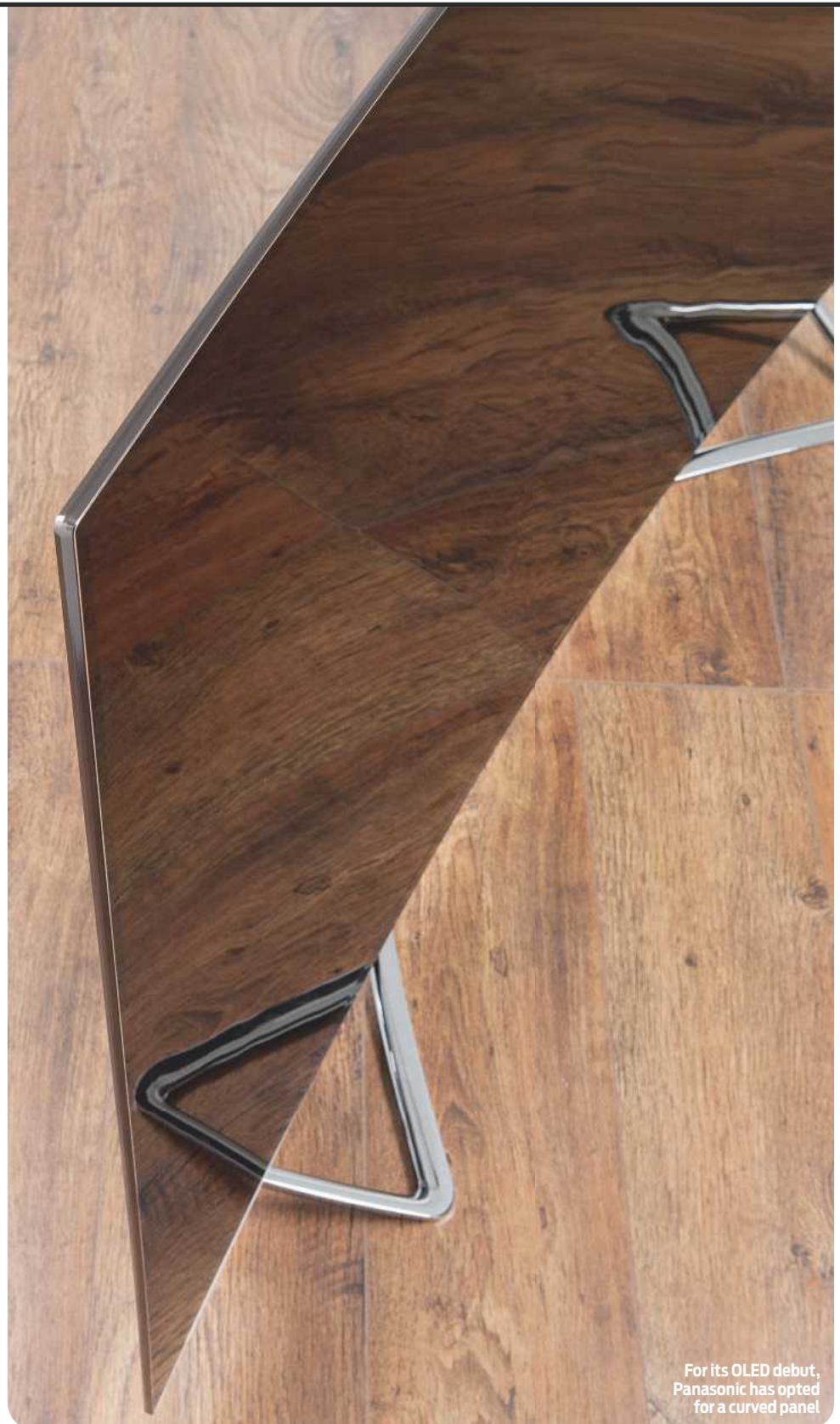
The 65CZ952B does its best to make you forget the lack of Firefox with its picture features. As well as using OLED screen technology, it employs Panasonic's highest '4K Pro' level of image processing plus some extra tricks the brand has developed expressly for its self-emissive debutante.

The 4K Pro side of things is there to control colour (using a professional-grade 3D Look Up Table to reference 8,000 different colour points), contrast and gradations – all with a focus on delivering pictures of total accuracy to established video standards. Or, as Panasonic likes to put it, delivering pictures that look exactly as the director intended.

There's something of a dichotomy at the heart of this idea, given that the 65CZ952B's panel is capable of going beyond the specs of the REC.709 mastering standard used by most of today's content – and the set provides a variety of 'remastering' engines designed to upconvert REC.709 fare to the screen's capabilities if you desire. And the wide colour and extreme contrast abilities should help it deliver HDR standards with some aplomb once a) they're finalised and b) Panasonic has rolled out the necessary firmware update.

With its multiple calibration tools and the endorsement of both the Imaging Science Foundation (ISF) for setup flexibility and THX for picture quality, the key thing about the 65CZ952B is that it's capable of delivering pictures that look more or less exactly as you want them to look, regardless of whether you favour accuracy or dynamism.

Regards the tools Panasonic has developed just for OLED, the key ones are a (superb) picture mode calibrated by Hollywood colourist Mike Sowa (whose work includes *Insurgent* and



For its OLED debut, Panasonic has opted for a curved panel

Oblivion), plus new techniques for tackling two issues that have been apparent on rival OLED TVs so far: reduced brightness at the screen's edge, and a tendency for OLED's usually stunning black level response to suddenly 'grey out' when the screen has to show light gradations just above absolute black. Whether these exclusive-to-Panasonic-picture features justify a cost that's twice as high as that of LG's same-sized OLED TVs is up for debate. What

isn't in doubt is that this TV delivers the best picture quality I've ever seen.

Embrace the Dark Side

Black. Black, black, black. Blackety-black. There's no getting past it – the performance of OLED where black levels are concerned has become the technology's major talking point. So it makes sense to start here. With the 65CZ952B dark scenes showcase black

colours that look black. Not some shade of grey, blue or green. Not as if they've been injected with radioactive material, but just black. Or Absolute Black as Panasonic calls it.

It's a mind-boggling (but not unexpected) trick and these pretty near immaculate blacks are delivered without clouding or ringing problems, or compromising the intensity of any bright elements elsewhere in the shot.

'The picture quality of Panasonic's TX-65CZ952B is the all-round best that I've ever seen from a TV'

Interstellar proves a fine test. Its outer-space tapestries look incredible, with an abundance of stars twinkling against the darkness as if they're points of light punched through the screen. The rich colours of planets and galaxies lose none of their lustre in the middle of this vast blackness.

Less stark but still murky content like my reference *Harry Potter...* sequence

(Voldemort's assault on Hogwarts from the final film) oozes fine detail, plus colour and greyscale nuances even in the darkest areas. And the pitch blacks on show aren't accompanied by the sudden infusion of greyness at just above black that can startle you on LG's OLED TVs.

With no cross-pixel light 'pollution', colours look consistently spectacular right across the spectrum. Panasonic's 4K Pro processing is astute and accurate; hues never stray into gaudy territory (except where the content demands it). I've previously witnessed a pink or blue 'blow out' marring OLED TVs. Not here.

Brightness is healthy – the screen injects plenty of punch into bright scenes. And Tom Cruise's largely white 'home' in *Oblivion* also reveals that Panasonic has successfully overcome the vignetting effect that's a clear issue on LG's OLED TVs (see page 46).

Being able to enjoy the contrast and colour advantages of OLED without these vignetting and greying problems (although I noticed the faintest trace of vignetting with mid-brightness shots) really makes you feel like you're witnessing the pinnacle of home cinema TV. Especially when these skills are joined by a beautifully exploited (by Panasonic's impressive motion processing and 3D LUT colour system) native 4K screen resolution. Sharpness, of both 4K and Full HD source material, is exquisite.

Viewing angles are good, too – way better than those of an LCD panel. Yet the curved screen is something of a hindrance here. Sit too far off-axis and the distorted shape can begin to irritate.

Perhaps surprisingly the 65CZ952B isn't a great advertisement for 3D. A run-through of *Jurassic World* found the dino reboot plagued by crosstalk ghosting noise, especially during dark scenes such as the final fight twixt Indominus Rex and his T-Rex and raptor challengers.

Images of all dimensions take a while to render, too – around 70ms at best – which isn't a great result for video gamers.

The TV is capable of pretty decent audio. There's neither enough bass extension nor raw power to match the very best sonic performers, but it's at least capable of achieving volume levels that don't feel out of scale with the 65in pictures, and always sounds clean and detailed.

A serious upgrade

The 65CZ952B doesn't reward your £8,000 with absolute TV perfection – that 3D disappointment puts pay to that, and the absence of the Firefox OS is a smart TV downer. Yet its picture quality is the all-round best that I've ever seen from a TV, albeit with HDR playback untested. If you're planning a big family holiday or car upgrade you might just want to reconsider... ■

ON THE MENU



→ There's no Firefox OS here (My Home Screen 2.0) so instead you get the previous 2014-era user interface. This is still a decent environment, but not cutting-edge. The Netflix (pictured) and Amazon apps support 4K streams

SPECIFICATIONS

3D: Yes. Passive

4K: Yes. 3,840 x 2,160

TUNER: Yes. Freeview HD; Freesat HD

CONNECTIONS: 3 x USB; 4 x HDMI; component video input; digital audio output; headphone jack; Scart input; RF and satellite inputs; Ethernet; built-in Wi-Fi

SOUND: 60W (2 x 10W for tweeter, mid-range and woofer)

BRIGHTNESS (CLAIMED): N/A

CONTRAST RATIO (CLAIMED): N/A

DIMENSIONS (OFF STAND): 1,448(w) x 847(h) x 113(d)mm

WEIGHT (OFF STAND): 27kg

FEATURES: USB multimedia playback; DLNA streaming; 4K Pro video processing; Mike Sowa-tuned picture preset; special OLED panel driver including 'Absolute Black' technology; colour 3D Look Up Tables; 4K Netflix and Amazon apps; Alcantara rear panel; curved screen design

HCC VERDICT



Panasonic TX-65CZ952B

→ £8,000 approx → www.panasonic.co.uk

→ Tel: 0844 844 3899

HIGHS: Incredible black levels and contrast; gorgeous colours; exceptional detail and accuracy; efficient motion handling

LOWS: 3D looks pretty average; a flatscreen might have been better; outdated UI; HDR might challenge its brightness; costs a lot...

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

The rear is dressed in a white Alcantara finish

Pioneer is back on track with the DTS:X-ready SC-LX89, but you'll need to pay attention, cautions **Steve May**

3D audio with a passion

WITH DOLBY ATMOS and DTS:X in its armoury, the SC-LX89 is currently Pioneer's best-dressed AV receiver. No stone has been left unturned when it comes to advanced functionality. But is there more to this badass box than high-tech feature overload?

Yes, actually. And it's how it sounds. The SC-LX89 has serious performance chops. Up and running, you won't be able to tear yourself away from its sonic embrace.

Its predecessor, the SC-LX88, was respectable enough, but later rivals showed it up as something of a perfunctory listen. It just didn't quicken my pulse in the way a hefty home cinema amp should. This update is immeasurably more exciting. The more I used it, the more I wanted to use it. Whatever was amiss with the SC-LX88 has been put right here.

Choose your weapon

It's a versatile nine-channel design, with pre-outs for an 11-channel setup if you're lucky enough to have the space. The sheer variety of speaker configurations available is head-spinning. Out of the box, you can opt for Atmos 5.2.4 or 7.2.2, or 7.2 with second room stereo or bi-amped fronts – in fact, there are no fewer than 15 pattern presets to choose from, catering for every predilection. And if you can't accommodate a forest of speakers, the receiver also brags Virtual Speaker processing, to theoretically widen or extend the soundstage. This

proved not as exciting as I hoped, as the phantom enclosures can't be used when the receiver is natively decoding multichannel sources. A compliant DSP mode is required.

Muscle, as usual, comes provided by a Direct Energy HD Class D amplifier. Pioneer quotes 220W-per-channel into 6 Ohms, and declares an ability to drive all channels simultaneously up to 850W. Hyperbole perhaps, but there's plenty of heft here. In my typically-sized home theatre room, the SC-LX89 had slam to spare.

Build quality is deliciously high, with an insulated dual-chassis design and anti-resonance (so-called 3D spaceframe) construction. A low-jitter 192kHz/32-bit ESS Sabre32 Ultra DAC (the ES9016) services all channels from deep within.

The SC-LX89 lays claim to HDCP 2.2 compatibility, but there's the devil (and a modicum of idiocy) in the detail. Only HDMI inputs 1 and 2 are compatible with next-generation 4K content devices. HDMI's 3, 4, 5, 6 and 7 are not HDCP 2.2 compatible. And to make matters more infuriating, there's no logic to the input labelling. While the DVD input (HDMI 1) supports HDCP 2.2 there's no chance you'll ever need or be able to buy an HDCP 2.2-compliant DVD >



A typically button-heavy Pioneer zapper



**AV INFO**

PRODUCT:
High-end Dolby
Atmos/DTS:X
AV receiver

POSITIONING:
Currently the
brand's flagship AVR

PEERS:
Denon AVR-
X6200W;
Onkyo TX-NR5010

The SC-LX89 is a nine-channel
design with copious system flexibility



There are seven rear HDMI inputs – just don't pay much attention to the labelling....

player. However, the Satellite input (labelled HDMI 2) isn't, even though this would certainly be HDCP 2.2 in a 4K home cinema system. From a user's point of view this is distinctly unintuitive, and my inner AV geek is irritated by the logic fail.

Similarly, there are seven HDMI inputs on the rear of the receiver, with an eighth on the front. Bizarrely though, the front input is labelled 5, while the back run skips from 4 to 6. A small point, but one which contributes to an air of casual user impenetrability.

Ease-of-use is a major reason why mainstream buyers have fallen out of love with AV receivers, yet the SC-LX89 makes no attempt to court newbies. You will need to get nose-deep into the instruction manual PDF if you want to drive it properly – on more than one occasion I was left scratching my head (and I've been using Pioneer AVRs for decades). Make no mistake, this is a complicated beast to tame. I think Pioneer could do with taking a leaf out of the Denon and Marantz usability book.

There is a highly graphical iControlAV5 app available for iOS and Android, but this merely presents the menus in a more attractive way. This app remains the quickest way to rename inputs, though.

Despite my grumbling, Pioneer has made some welcome changes to its user interface with the SC-LX89. Still dour of appearance (all greys, blacks and blues) there are now dedicated clusters for Network and Bluetooth, MCACC Pro calibration and System Setup. There's even an option to access receiver menus via a web browser.

Wider system control is available through RS232 or a pair of 12V triggers – good news for custom installers.

Delving deeper

MCACC Pro calibration is nothing if not thorough, offering a deep interrogation of your acoustic environment and setup, including speaker phase and group delay characteristics. Once calibration is finished, you can take a much closer look at what the process has decided, from level and distance to standing wave correction and channel EQ. There's an adjustable X-Curve (to temper soundtrack brightness) and six memory slots to save subtle variations, perhaps to cater for different content or setups.

There's no doubt that MCACC Pro is extraordinarily clever; it seems to tweak the soundfield with a far more knowledgeable hand than many rival systems. It doesn't strip the life or energy from the box, like some manage. Of course, you can choose to manually set up the entire system, too.

In addition to its eight inputs, the amp has three HDMI outputs. The main two feed panel and projector, while a third delivers HD video to a second zone. Legacy connections include component and composite AV, twin digital coaxial and digital optical audio inputs, a phono (MM) turntable input and a USB-DAC (B type) for native playback of DSD sources. In addition to Ethernet, there's support for Wi-Fi, Bluetooth and AirPlay. Curiously,



The front flap hides USB and HDMI hookups for portable devices

switching between Wi-Fi and wired caused the receiver to undertake a major reset which made the UI unavailable for an age (actually about a minute).

Once online, the Network button cycles through any connected DLNA media servers, as well offering Spotify Connect and 'net radio access. Over a network the SC-LX89 can play DSD 2.8MHz/5.6MHz content, while file support extends to MP3, WMA, WAV and AAC.

Something in the AIR

While THX post-processing may be AWOL, the SC-LX89 has been tuned and certified by London's AIR Studios, and claims improvements to the power supply and components over last year's range-topper. In use, it is tonally rich, with superb timbre-matching between channels, as managed by Pioneer's Full Band Phase Control. Even if you don't have matching speakers in the round, the receiver does a great job of unifying drivers.

The AVR has no problem with the shock and awe test offered by *Unbroken*. The opening sequence, in which American bombers are pounded by anti-aircraft fire as they take part in a raid over Japan, before being engaged by Zeros, is gratifyingly dramatic. As the bomb bay doors open, it's as if the sides of my listening room have peeled back; there's a sudden sense of open space before the detonations begin.

'A proper heart-thumper of a home cinema receiver – one to audition sooner rather than later'

Violent transients are clearly the SC-LX89's bread and butter; big thunderous jolts rock the room, flak booming all around – above (it's an Atmos mix, after all), to the rear, across the L/C/R. After the bomber has dropped its payload, an aftershock ripples from the LFE. When a Zero strafes left to right, it flies closer and with far more menace than on Pioneer's previous AVR. The LX89 immerses you deeper in the action, providing a far more exhilarating ride. It's a smooth-mover, too: balancing dialogue, effects and score with considerable *elan*.

Straight from the retailer there's Dolby Surround (TrueHD and Atmos) and DTS Neo decoding available. The receiver is also ready for the DTS:X/DTS Neural: X firmware update as and when it lands – while Denon has pledged a release date, Pioneer wouldn't commit when I asked them. I doubt it can be that far off, though. Auro-3D isn't an option.

There are other DSP modes, of course, dubbed Action, Drama, Advanced Game,

Sports, Classical, Rock/Pop, plus a couple of Eco options. These are actually not as contrived as you might imagine.

The Action setting certainly didn't add any unwanted artefacts to *Unbroken*'s dog fight, and maybe it even opened the airspace up a tad. It's difficult to tell for sure when you're cowering in the corner of the room, trying to avoid shrapnel.

The receiver also sounds spot-on with two-channel sources – an onboard audio upscaler will take any content and apply Hi-bit32 processing for 176.4kHz/192kHz 32-bit playback, thereby making full use of that Sabre DAC. Similarly, Hi-Bit24 upscaling works with multichannel Dolby Digital content. Playing *Gravity* in its non-music iteration (Blu-ray, DD5.1) proves a unique multichannel experience, with chatter breaking through from my room's rear right, and then emerging from points across the front soundstage. The Pioneer creates a sense of isolation and immersion that's extraordinary.

There's a bewildering selection of audio enhancements available, most of which work seamlessly in the background. To derive better audio from Bluetooth streams, you're offered an iteration of Pioneer's long-standing Auto Sound Retriever. Dubbed AIR, it claims to improve cadence and improve the S/N ratio of streamed tunes. There's also the brand's PQLS system on hand, which works with compatible Pioneer Blu-ray players to minimise jitter across HDMI. Even during the most innocuous of tasks it appears there's some level of science at play.

Video signal enhancements are available, too (which I generally choose to ignore), plus upscaling. When used with a 4K display, the AVR can up-rez 1080p content to 2160/60 with 4:4:4 colour. My advice, as always, is to see whether this results in an improvement over letting your screen do the work; don't automatically think it will.

Sonically rewarding

Pioneer has rekindled its musical mojo with the SC-LX89. This a bodacious, powerful performer boasting all manner of brilliant audio-moulding technology, all wrapped up in an elegant chassis. This isn't an unqualified recommendation, though. The fact that only two inputs are HDCP 2.2-capable could prove a significant deterrent to those looking to invest in a hub receiver with some degree of future expandability. And it's not an easy machine to master, either – you'll need time to learn exactly what the AVR can do, and how to do it.

Yet the sonic rewards are unquestionable when it's dialled in. Dynamic and powerful, yet capable of subtle nuance, this a proper heart-thumper of a home cinema receiver, not to mention a cracking two-channel listen with hi-res music sources. The SC-LX89 is one to audition sooner rather than later ■

ON THE MENU



→ Pioneer continues to lag behind some of the competition with its uninspired AVR home screen, but at least its sub-menus (including MCACC Pro) are comprehensive

SPECIFICATIONS

DOLBY ATMOS: Yes

DTS:X: Yes – via firmware update

THX: No

MULTICHANNEL INPUT: Yes. 7.1 phono

MULTICHANNEL PREOUT: Yes. 11.2-channel

MULTICHANNEL OUTPUT (CLAIMED):

9 x 220W (into 6 Ohms)

MULTIROOM: Yes. Three zones

AV INPUTS: 2 x composite; 4 x digital audio (2 x optical and 2 x coaxial); 2 x component video

HDMI: 8 x inputs (two with HDCP 2.2);

3 x outputs

VIDEO UPSCALING: Yes. To 2,160, 60fps

DIMENSIONS: 435(w) x 185(h) x 441(d)mm

WEIGHT: 18.1kg

ALSO FEATURING: AIR Studios Monitor Certification; Bluetooth; Apple OS and Android control apps; MCACC Pro room calibration; media playback for AIFF, Apple Lossless, WAV, FLAC, MP3, WMA, AAC, DSD; Ethernet; dual-band Wi-Fi; AirPlay; Spotify Connect; internet radio; USB-B input; Direct Energy HD amplifiers; Spaceframe 3D design; dual subwoofer outputs

HCC VERDICT



Pioneer SC-LX89

→ £2,200 approx → www.pioneer.co.uk

HIGHS: Smooth, dynamic presentation; versatile speaker options; intelligent MCACC Pro calibration system; DTS:X-ready

LOWS: Stingy HDCP 2.2 HDMI provision; bloomin' complicated; limited number of connected music services

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

44 LG 65EF950V → £4,000 approx

HI SPY!

We investigate
the first season
of Marvel's *Agent
Carter* on BD
— see p106

A flat OLED TV?
Whadda-ya-know!

LG delivers its first true flat Ultra Hi-Def OLED TV, and **John Archer** loves it

OLED without a curve in sight

NO MATTER HOW glamorous curved screens look, and no matter how hard Samsung tries to argue that curved TV screens improve the viewing experience, they're still roundly (see what I did there?) avoided by many buyers. This has led to frustration among AV die-hards desperate to upgrade to OLED screen tech but unable to find an OLED screen that wasn't curved.

Thankfully LG has cottoned on to this and released a range of flat OLED models: the EF950V series. And we're looking at the 4K, £4,000, 65in 65EF950V model.

And by 'looking at', I mean 'ogling'. Make no mistake about it: far from feeling like a poor relation to LG's curved offering, the 65EF950V's flatness feels like a natural home for OLED. Not least because 'going flat' spotlights the incredible slimness OLED can deliver. At its edges and over around two-thirds of the 65EF950V's rear panel it's less than 5mm deep, creating a physics-defying profile that will have movie den visitors cooing with envy. (The reason the entire rear can't be less than 5mm deep is that LG has to find room to put the speakers, Freeview HD tuners and video processing systems).

The flat approach also looks much less cumbersome when wall-mounted, and the fact that the panel doesn't distort onscreen reflections, like curved screens do, is a bonus.

Take control

LG provides enough picture tweaks on the 65EF950V to keep both dedicated amateur and professional calibrators happy, including colour, gamma and white balance management, along with an OLED brightness setting that operates a little like an LCD backlight adjustment, and reasonable degrees of control over its noise reduction and motion compensation processing.

First impressions of the 65EF950V in action are overwhelmingly positive in the

way it seems only OLED can deliver. As with its Panasonic rival, the LG TV produces levels of contrast and black depth that leave other types of TV technology looking washed out by comparison. Even the very best LCD TVs – those that use direct LED lighting and local dimming – can't deliver the dazzling visuals of *Gravity*'s above-Earth shots or the windows of Hogwarts at night with anything like the boldness and richness here.

And, again, these bright image areas aren't sullied by the localised clouds or light bands that invariably appear around them to some extent with all LCD TVs.

The 65EF950V can be watched from even quite acute angles without colour or contrast performance suffering. What's more, since the screen is flat you don't have to worry about kooky image geometry when you're watching from the side of a room.

The screen revels in its native 4K resolution. With sport, this means players' designer stubble and snarling faces are brought into sharp focus, while HDD-served 4K clips of *Exodus: Gods And Kings* enjoy remarkable resolution, texture and depth. It's a palpably different experience than Full HD, and has me itching for the eventual UHD Blu-ray release.

Sharpness is, of course, aided by the pixel-level light output and colour precision that OLED makes possible. And the superior motion rendering of the technology also makes its presence felt, again heightening the sense of overall image clarity.

The TV may be flat, but the remote still sports a few curves



AV INFO

PRODUCT: Flat 65in OLED TV with a 4K resolution

POSITIONING: The premium 65in TV in LG's current range

PEERS: Panasonic TX-65CZ952B; Samsung 65JS9500



The 65EF950V isn't quite as assured at upscaling HD sources as the Panasonic 65CZ952B, failing to engineer quite so much sharpness. But it still crafts a noticeable upgrade on straight HD, and seems a little more refined in its upscaling efforts than previous LG 4K models.

With UHD Blu-ray still to be launched, I tested the 65EF950V's HDR performance with a couple of HDR Amazon series – *Mozart In The Jungle* and *Bosch* – and some 4K HDR clips provided by LG. For the most part the

'The flat design and £4,000 price point for a 65in UHD model make this OLED TV ultra competitive'

results were excellent, as the luminance range of the HDR content was unlocked by the dynamic talents of the OLED screen. Actually, the 65EF950V is slightly brighter than Panasonic's set, giving its images a touch more HDR punch than the Panasonic model will likely do following its firmware update.

HDR playback does, though, highlight a couple of niggles that you don't get on the (twice as expensive) Panasonic. Firstly, the left and right edges of the LG's image appear dimmer than the central areas with some shots – such as those of Tom Cruise's white-walled sky-base in *Oblivion* – creating

an unwanted vignetting effect. And the 65EF950V's normally stunning black levels can suddenly take on a quite noticeable and very uOLED-like grey hue if the source content features just the right awkward mix of bright and dark content – a mix more likely to appear with HDR than non-HDR content.

These two issues only crop up from time to time, and usually only fleetingly. You can reduce the regularity of their appearance, too, by limiting the screen's general and OLED brightness. Yet having spotted the issues once, you might sometimes find yourself looking out for them again. Alternatively, you may simply ignore them and focus on the set's good attributes.

So how does this OLED TV compare in brightness terms with high-output LCD rivals? True to form, the 65EF950V isn't as equipped in this regard as Samsung's JS9500 series (a clear rival in price and spec). Yet while HDR playback is therefore not as immediately dazzling, the visual impact remains courtesy of the foundation provided by its superior black levels. As HDR builds towards a 2016 breakout, it's clear that both rival screen technologies are ready for it.

Connections are as you would expect from a high-end TV in 2016, including a quartet of v2.0 HDMI's capable of handling both 4K at 60fps and HDR video. LG's smart features are delivered by the 2.0 version of its WebOS operating system. This remains the single most efficient and easy-to-follow smart TV platform around, despite strong competition from Panasonic's Firefox system.

LG provides 4K versions of the Amazon and Netflix streaming services, as well as BBC iPlayer and Demand 5 catchup services and Sky's Now TV platform. It is disappointing, though, to find no support for All4 or the ITV Hub, especially now that Panasonic and Sony provide Freeview Play and YouView respectively in many of their sets.

The 65EF950V arrives with a very serviceable audio system. Designed in conjunction with specialist marque Harman/Kardon, the speaker array manages good vocal clarity, plenty of treble detailing and a surprising amount of bass wallop. *Independence Day*'s 'city destruction' sequences (I'm prepping for the sequel) have cinematic drama.

Watershed moment in TV

All in all, despite a couple of relatively minor flaws, the 65EF950V is seriously worthy of consideration and marks something of a watershed moment in TV history. Moving to a flat form and hitting a £4,000 price point (perhaps less if you hunt around) for a 65in UHD model makes OLED competitive with the upper echelons of the LCD TV world for the first time. In other words, with the 65EF950V OLED has finally, truly, come of age ■

ON THE MENU



→ The TV uses LG's WebOS 2.0 system (there's a 3.0 flavour coming to 2016 sets) and it makes for a remarkably fluid user experience – quick, simple and very intuitive

SPECIFICATIONS

3D: Yes. Passive
4K: Yes. 3,840 x 2,160
TUNER: Yes. Freeview HD plus CI slot
CONNECTIONS: 4 x HDMI; RF input; 3 x USB; RGB Scart; optical digital audio output; headphone jack; Ethernet; integrated Wi-Fi
SOUND: 2 x 10W (two-way, four-driver system)
BRIGHTNESS (CLAIMED): N/A
CONTRAST RATIO (CLAIMED): N/A
DIMENSIONS (OFF STAND): 1,450(w) x 842(h) x 49.9(d)mm
WEIGHT (OFF STAND): 19.9kg
FEATURES: USB multimedia playback; DLNA streaming; Perfect Mastering Engine; Triple XD Engine; OLED panel; WebOS 2.0 smart system; flat screen!; Harman Kardon-designed audio system; 'floating' transparent neck design; Magic Remote

HCC VERDICT



LG 65EF950V

→ £4,000 approx → www.lg.com/uk

→ Tel: 0844 847 5454

HIGHS: Jaw-dropping colour and contrast; spectacular super-thin design; good connectivity and smart system

LOWS: Occasional vignetting effect; occasional greyness in dark areas; no ITV Hub or All4 catchup support

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

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SEVENoaks
SOUND & VISION

Adam Rayner tests some affordable speakers with big ideas

JBL enters the budget loudspeaker Arena

Proprietary horn-loaded tweeters are used throughout the Arena line



AV INFO

PRODUCT:
Floorstanding 5.1
speaker package

POSITIONING:
Entry-level, below
JBL's Studio range

PEERS:
Cambridge Audio
Aero 5.1;
Monitor Audio MR4
5.1

'The first thing that assailed me was how dynamic this JBL system is considering the driver count'



I'M SURE MOST of you will know that JBL is one very famous company. Its speakers can be found in commercial cinemas across the globe and domestically it makes the mind-boggling Synthesis line that can be heaped up until you're spending cost-no-object type money and have world-class audio to go with it.

And as well as histories (JBL dates back to the 1940s) speaker companies also have personalities. British hi-fi brands tend to espouse a smooth, almost polite output. German hi-fi leans toward a cold antiseptic sting with crisp high frequencies. American audio can seem brash. And JBL is the latter – on the automotive side, the company is unassailable for making potent drivers for car nerds at ridiculously low prices. It makes high-end in-car gear, too, of course.

The same holds for JBL's home cinema products. It offers all sorts, from TV booster speakers (see p70) and soundbases/soundbars, to home-theatre-in-a-box systems and subwoofers. Move up to traditional loudspeakers and it has many lines, too. The Control series is a semi-pro application, made with injection-moulded enclosures. Studio, the slightly higher entry-level product, uses three-way speakers. Arena, tested here, is JBL's all-out value offering, made in simple veneered board with black or white finishes.

The range is aimed at movie fans who are greedy enough to wish for detail and dynamics, scale and weight, and awesome placement. It seems a ridiculous ask all at once – almost childish – yet the JBL product has the back-end tech to do it.

It's a perfect size for a regular UK movie room – the cubic that the second, smaller-space THX Ultra2 rating was designed for – not that this is remotely THX-rated.

That said, THX is a set of performance rules and for speakers it's about power and potency of output and above all, the accuracy of sound imagery. That accuracy was always something that JBL did tremendously well, with proprietary parts made to steer a speaker's output the better. The acoustic lens is a JBL heritage idea. As is the somewhat daftly-named 'High Definition Imaging' tech (HDI) on these Arenas.

This is a shallow horn. It has a soft dome tweeter at its apex and the shape is squared-off to provide the optimum side-to-side dispersal of the highs, as well as the best up-and-down 'throw'. Output response off-axis, as well as on-axis, is so crucial to how well loudspeakers perform. There is a classic measurement plot called a Polar Response diagram that can show sound by frequency, loudness (in decibels) and directivity. This acoustic science can get intensely techy, fast, but makes for interesting reading.

And JBL has been doing empirical, suck-it-and-see R&D for longer than almost anyone. Thus these horns are subtle. They are also painted in a tremendously tactile coating that enables the steering of high frequencies without setting up a ringing chime in the metal part itself, or sounding harsh, like reflections in a tiled room. Coupled with a 7in cone in the Arena 170 towers, well-made of simple asymmetric cubic construction with a big port in the rear, they rock. The petite sealed, Arena >





The sub's 10in driver is twin-ported

120 is equipped with a smaller 5.5in cone and the same HDI dome/horn, while the 125C has the tweeter and two of those smaller cones with two ports to the rear. The cabinets are finished off with handsome short-form grilles to the towers, and smart badging in silver. It's nice to see the use of Allen-headed bolts to fix the drivers, too.

The SUB 100P could not be simpler. It features a single 10in driver (there's no additional passive radiator here), a 100W amplifier, two rear ports and a single LFE input. It'll stand on rubber feet or the supplied spikes. Separately available for £260, it's undoubtedly the most basic part of this system.

When I auditioned the array I'd just bought the delightful *Inside Out* by Pixar but still had *Elysium* residing in the deck [you must love that film – Ed], so tried both movies, as well as pushing some music TV through them while they were in situ. And, as you may have gathered already, I was suitably impressed.

Dynamic delivery

Elysium, with its apartheid-in-space sci-fi narrative, has two distinct palettes and soundscapes. One gritty, hard and tough with shouting kids and overblown car sound-systems; the other all sweetness and crisp suburban light. During the opening Earth-bound sequences the first thing that assailed me was how dynamic this system is considering it has so few drivers. The ribs on every low-frequency transducer and their soft compliant suspension means they push air like pistons without breakup. So it's loud enough to be exciting and then – boom – it's suddenly much louder. That's a trait I like.

And the detail of the favela/shanty/slums' soundtrack was intense, with the performance of the tweeters apparent all around the five-channel soundfield. Those tiny rears act larger than they are, and can jolt you off the sofa if you position them where the horns can get you. Overall, there is a punch and tautness of tone to the array that beguiles, although at

the same time there's certainly a lack of the subtlety and nuance that marks out higher-quality loudspeakers.

Without spoilers, the nice guy from *District 9* is a future villain of massive vileness, with a crew who gun a transport-chopper-sized trans-atmospheric vehicle. Through the JBLs, the impact of its engines was epic. Not mega-theatre sized, but remarkable considering the dimensions of the enclosures.

There's a scene featuring people trying to get up to the eponymous space habitat – like modern migrants leaving a hellhole – via shuttlecraft. Again, the mayhem detail of the people milling around, underpinned by huge engine noises, was articulated well, and when one of the craft gets shot down, seen from further away, the sound is anti-climatically quiet and minor, travelling with a soft signature all the way from left to right.

I was ever-so-impressed by the bass. The modestly-specced subwoofer had an in-room response significant down to at least 30Hz, with traces of wobble below even that. The box is well ported, the driver shifts gouts of air and once I had *Inside Out* spinning, I was able to experience the sheer scale of the Train Of Thought that rumbles through Riley's sub-conscious. Again, though, subtlety of delivery isn't a strong point.

There's a lot of POV inner-monologue from the Pixar movie's protagonists and this is pinned very dead-centre. The twin midbass drivers in JBL's centre speaker help add some heft to these vocalisations. Some are really chaotic; Riley meets a boy and we venture inside his mind where all of his emotions are in overdrive, with alarms sounding 'Girl! Girl! Girl!' This sequence fully tested the array and found me needing to turn the subwoofer level down a bit as it unloaded. Have it set too high and you'll enter overdrive territory, so be careful.

A final observation. *Inside Out* is all about memories and they can fade, shatter and clang about with messed emotions. These manifest as orbs, which, when dropped, are glassy in their chime as they hit the floor and roll around. It's a distinct, tricky audio effect, yes these inexpensive speakers, maybe even because of their needs-must simplicity, do an amazing job of recreating it.

A budget bargain

If you are looking for a speaker package that is tremendous value for money yet allows you to play loud with headroom left over – and can show off the smarts of movie sound designers – then this Arena system is going to be awfully hard to beat. If I was limited to a sub-£1,000 budget, I would probably spend my own money on these. They are very much a muscular home cinema product – as opposed to hi-fi – and the design is unadventurous, but still heartily recommended ■

SPECIFICATIONS

JBL ARENA 170

DRIVE UNITS: 1 x 7in polycellulose midbass driver; 1 x 1in soft fabric dome tweeter with HDI (High Definition Imaging) waveguide
ENCLOSURE: Two-way, rear-ported
FREQUENCY RESPONSE: 44Hz-40kHz
SENSITIVITY: 87dB
POWER HANDLING: 20-200W
DIMENSIONS: 217(w) x 959(h) x 283(d)mm
WEIGHT: 27.6kg

JBL ARENA 125C

DRIVE UNITS: 2 x 5.5in polycellulose midbass drivers; 1 x 1in soft fabric dome tweeter with HDI waveguide
ENCLOSURE: Two-way, rear-ported
FREQUENCY RESPONSE: 90Hz-40kHz
SENSITIVITY: 89dB
POWER HANDLING: 20-150W
DIMENSIONS: 546(w) x 179(h) x 200(d)mm
WEIGHT: 7kg

JBL ARENA 120

DRIVE UNITS: 1 x 5.5in polycellulose midbass driver; 1 x 1in soft fabric dome tweeter with HDI waveguide
ENCLOSURE: Two-way, sealed
FREQUENCY RESPONSE: 100Hz-40kHz
SENSITIVITY: 86dB 1W@1m
POWER HANDLING: 20-100W
DIMENSIONS: 188(w) x 341(h) x 113(d)mm
WEIGHT: 3.5kg

JBL SUB 100P SUBWOOFER

DRIVE UNITS: 1 x 10in polycellulose woofer
ENCLOSURE: Front-firing, dual rear-ported
FREQUENCY RESPONSE: 41Hz-150Hz
ON BOARD POWER: 100W RMS
REMOTE CONTROL: No
DIMENSIONS: 368(w) x 364(h) x 406(d)mm
WEIGHT: 10.9kg
CONNECTIONS: LFE input

HCC VERDICT



JBL Arena 5.1

→ £850 approx → uk.jbl.com
 → Tel: 01707 278 113

HIGHS: Filtered-down tweeter technology impresses; dynamic delivery; solid low-end performance

LOWS: Relatively easy to overdrive the subwoofer despite its serious output; boxy styling; brash rather than subtle

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

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WHAT HI-FI?
SOUND AND VISION
AWARDS 2015
PRODUCT OF THE YEAR
Systems
Best music system under £400
Denon D-M40DAB

Amplifier/DAC
NAD D 3020
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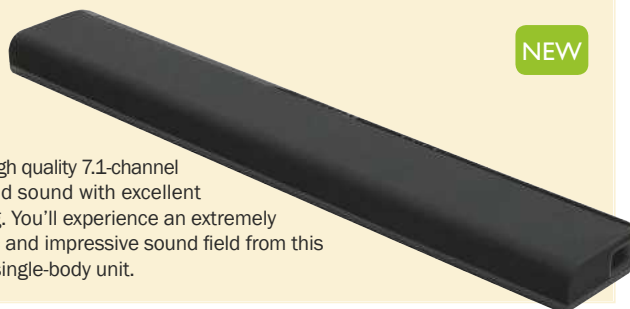
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Eastern promise

On the evidence of this great-value 4K TV from Chinese marque Hisense, [John Archer](#) thinks the more established TV brands should be worried

AV INFO

PRODUCT:
Affordable 50in 4K TV with 4K Netflix/Amazon

POSITION:
Below the brand's new 'ULED' HDR-ready TVs

PEERS:
Finlux 55UT3EC320ST;
Panasonic TX-50CX700B

WHILE THE PRICES of 4K TVs have plummeted since the first models came out in 2013, nothing quite prepares you for the LTDN50K321UWT from Chinese brand Hisense. And I'm not just talking about that tongue-twisting model number – this is a 50in 4K TV that can be yours for around £500, despite appearing on paper to have all the features needed to keep up with more expensive offerings from better known brands.

While Hisense is new to the UK, it's been around since 1969 in its native China. In fact, it claims nearly a fifth of the Chinese TV market and, even more strikingly, by the end of 2014 it had grabbed 6 per cent of the global TV pie. It followed this with sponsorship of the Infiniti Red Bull Formula One racing team. It seems that Hisense is here to stay.

Of course, selling a 50in 4K TV for £500 won't hurt the brand's chances of becoming

a household name. Especially when the shelf appeal of that price is joined by a design that's on-trend slim and minimalistic. The TV's support legs look a bit unsophisticated, but they are at least easy to attach, unlike the insanely fiddly mounts used by many of today's flatscreens.

And the LTDN50K321UWT's connections are a pleasant surprise. You get four HDMI inputs rather than the three or even just two that might have been expected. What's more, these HDMI 2.0 inputs can handle 4K sources at 50/60 frames a second, rather than just 24/30p. There are also three USB inputs for multimedia playback, and built-in Wi-Fi for streaming in files from DLNA-capable devices or accessing Hisense's online content.

Yes, that's right: despite its affordability the LTDN50K321UWT is equipped with smart features. Admittedly, the interface to this is

drab and lacks the sophistication of systems like LG's WebOS or Panasonic's Firefox TV, and the number of genuinely useful apps is limited to BBC iPlayer, YouTube, Netflix and Amazon.

While it would have been nice to also find Now TV, the ITV Hub, All 4 and Demand 5, the four key streaming apps you do get may well be enough for many users, especially as the Netflix and Amazon clients support 4K streaming.

Wot? No 3D?

While the screen's feature set doesn't extend to 3D playback, it does offer a fair set of picture setup aids, including white balance management and control over the TV's motion smoothing and noise reduction

'With sharpness and detail the TV fares well. Native 4K content easily showcases the step up from HD'

processing. No amount of tweaking can get the LTDN50K321UWT's pictures marrying up particularly accurately with the industry's REC.709 video standard, which will count as a significant black mark against it for some video enthusiasts, but this is not at all the same thing as saying the TV's picture quality is poor. On the contrary, it's better than you've any right to expect for so little money.

Hard experience of cheap TVs suggests that they struggle – badly – in at least one and often all of the key picture quality areas of black level response, sharpness (especially with motion) and colour vibrancy. Yet the LTDN50K321UWT never does a less than solid job, and in some areas it's very good.

A surprising and welcome strength is its ability to produce a decently rich, deep black colour. During the night-time Pacman sequence in *Pixels* – yes, I used *Pixels* as a test disc, deal with it – the skies around the glowing ball of pixelated Pacman 'fun' suffer little with the grey misting effect often witnessed on affordable TVs. And provided you've reined in the screen's backlighting – take it down to around 27-30 for dark-room viewing – the darkness of *Pixels*' night scenes looks largely free of aggressive clouding inconsistencies from the direct LED array. Having a particularly bright object at the centre of a mostly black screen doesn't seem to faze it.

Hisense's in-built dynamic contrast system is effective, adding extra contrast without being much of a distraction. My only criticism of the LTDN50K321UWT's black level

performance is that dark areas lack some nuance once you've reduced the backlight. Still, this situation is preferable to having shadow detail obscured by greyness.

The ultra punchy colours of *Pixels*' video game escapees look bold and rich, joining with the TV's deep black levels and a reasonable amount of brightness to deliver pictures of eye-catching dynamism.

As noted before, these colours don't feel especially accurate. But their intensity makes me confident that most viewers will be more than happy with them. Certainly they look punchier and more convincing than those of many budget screens.

When it comes to sharpness and detail the TV fares well. With native 4K content – *Jessica Jones* and *Better Call Saul* on Netflix – the screen leaves you in no doubt that you've stepped up from HD. I found I had to switch off the TV's noise reduction system, however, to keep the amount of detail and texture on show extreme, yet not to the point where grain became gritty or edges became stressed.

The LTDN50K321UWT scores more brownie points with a respectable upscaling performance of traditional HD sources. It also retains much of its sharpness when showing moving objects like football players, avoiding a soft, smeary look.

Of course, this set is not Hisense's flagship, and this means that faults are expected – and apparent. Skin tones can look rather monotone and plasticky at times (making Adam Sandler's *Pixels* performance seem even more robotic...). The motion and noise reduction processing can struggle to differentiate between natural grain and real noise, leading to a rather processed finish with grainy sources unless you knock such features on the head. The set also struggles to reproduce tonal differences at the brightest end of the image spectrum, resulting in bright areas of a picture appearing bleached out and lacking in subtlety.

Audio is more average than its pictures, too. The TV can go loud enough to keep an action movie company without suffering speaker crackles or cabinet rattles, but it lacks bass, its mid-range feels strained under pressure and its trebles are both over-dominant and prone to harshness.

Welcome debut

These issues prevent Hisense's well-priced TV from being an absolute budget classic. Yet they're nowhere near enough to stop it from being both a bargain for cash-strapped 4K fans and a seriously impressive statement of intent from the brand. There's certainly room in the UK marketplace for a new flatscreen purveyor, and if Hisense can continue in this fashion then its presence will be welcome ■

ON THE MENU



→ Hisense's user interface lacks the graphical flourishes and customisation offered by many of its long-established rivals but remains simple to navigate. The smart hub (pictured) is missing some UK on-demand apps (ITV Player, for instance) but BBC iPlayer, Netflix and Amazon are all present

SPECIFICATIONS

3D: No
4K: Yes, 3,840 x 2,160
TUNER: Yes, Freeview HD
CONNECTIONS: 4 x HDMI inputs; Scart (RGB); composite video input; 3 x USB; built-in Wi-Fi; Ethernet; headphone jack; optical digital audio output; MHL support; component video input
SOUND: 2 x 10W
BRIGHTNESS (CLAIMED): N/A
CONTRAST RATIO (CLAIMED): N/A
DIMENSIONS (OFF STAND): 1,124(w) x 649(h) x 82(d)mm
WEIGHT (OFF STAND): 13.8kg
FEATURES: USB multimedia playback; support for 4K streaming from Netflix and Amazon; white balance calibration; motion processing; noise reduction processing; dynamic contrast engine; direct LED backlight; HDCP 2.2 support; quad core processor

HCC VERDICT



Hisense LTDN50K321UWT

→ £500 approx → www.hisense.co.uk
 → Tel: 0113 395 6930

HIGHS: Outstanding value for money; engaging, dynamic pictures; good connectivity; 4K video-on-demand apps; neat design
LOWS: Colours more punchy than accurate; uninspiring sound performance; not many smart features; aggressive noise reduction

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

56 EPSON EH-TW5300 → £580 approx

AV INFO

PRODUCT:
Budget home
cinema LCD PJ

POSITIONING:
One of three new
budget 1080p
Epson beamers

PEERS:
BenQ W1070+;
Optoma HD141X



You no longer need a grand for a 1080p PJ. **Steve May** loafes around in the cheap seats

Home cinema matinee idol

THE HOME CINEMA projection market is evolving. At the premium end, 4K and laser light are beginning to dominate, while 1080p offerings are vacating the middle ground and heading into territory once dominated by low-cost 720p shooters. In between stretches a yawning chasm where manufacturers are increasingly wary of treading.

The EH-TW5300 reviewed here is one of a trio of lookalike low-cost Full HD models released by the world's biggest projector brand. Sandwiched between the EH-TW5350 and EH-TW5210, it's a well-specified 2D/3D model aimed at both casual users and more dedicated AV enthusiasts. Do you really need to spend more for a true home cinema experience? Perhaps not...

Fronting the unit is Epson's D9 LCD panel technology, illuminated by a bright UHE lamp. The latter is claimed to last around 3,900 hours, extending to 7,500 in Eco mode. Epson suggests you'll be able to watch a movie every day for 11 years without changing the lamp. Whether you can find that many actually worth watching is another matter entirely.

The projector can throw a bright 100in image from around three metres away (projection ratio is 1.22-1.47:1), making it ideal for smaller rooms. Light and colour output is rated at a dazzling 2,200 Lumens, bright enough to use in a living room with ambient light.

The EH-TW5300 is nothing if not dinky. Just 297mm wide, this lightweight should easily fit in the proverbial sock drawer when not in use. And at 2.9kg it's light enough to be an effortless ceiling mount if you're looking to build a more permanent theatre.

Connectivity comprises two HDMI inputs, one of which is MHL-friendly for hookup to compatible smartphones, as well as phono AV and PC VGA (with supported resolutions up to WXGA++). There's also an audio minijack output, plus a USB port for JPEG playback.

Finished in gloss white, it's a nice-looking piece of kit. The roof is dimpled with on-body controls. In addition to basic menu navigation, there's Home and Source selection, plus lamp and temperature warning lights. There's even a 5W integrated rear-facing speaker.

The lens is offset to the left, with hot air vented in from the front right and routed to the rear. Both manual zoom and focus ring are recessed into the cabinet. Epson offers vertical and horizontal keystone correction, but not lens shift. If you need more help getting the image where you want it, an adjustable foot allows you to angle the thing up.

There's really not a lot involved in getting the EH-TW5300 off and running. Many users will simply point it at a white wall, pull the focus into sharp relief, and connect their content source. Which leaves plenty of time for beer and Skittles.

Despite the price tag, the EH-TW5300 has some neat image processing on board. Picture presets comprise



The EH-TW5300 offers Full HD 3D playback at a tempting price

A cutesy clicker is supplied



The Epson's zoom is capped at 1.2x

SPECIFICATIONS

3D: Yes. Active shutter

4K: No. 1,920 x 1,080

CONNECTIONS: 2 x HDMI inputs; PC VGA input; USB input; composite video; stereo audio

BRIGHTNESS (CLAIMED): 2,200 Lumens

CONTRAST (CLAIMED): 35,000:1 (Dynamic)

DIMENSIONS: 297(w) x 245(d) x 114(h)mm

WEIGHT: 2.9kg

FEATURES: Proprietary 3-LCD design; 5W built-in audio; 3,900-hour lamp life (Normal mode); 7,500-hour lamp life (Eco); 27dB fan noise (Eco); Cinema, Dynamic, Natural, Bright Cinema presets; projection ratio 1.22-1.47:1; frame interpolation modes; 1.2x zoom; auto iris; adjustable feet; keystone correction

Dynamic, Bright Cinema, Natural and Cinema, and these are joined by deeper image manipulation, should you want to tweak. RGBCMY offsets? Help yourself.

Epson's SuperWhite mode is off by default, dulling the image when engaged. The auto iris can be switched off, or run in either Normal or High Speed modes. Similarly, the lamp has Normal and Eco modes. With the former, there's a cyclonic 37dB rush that's impossible to ignore. This drops significantly in Eco mode (where output is rated at a more modest 1,500 Lumens), but operational noise is still comparatively intrusive at 27dB.

While the projector is Active Shutter 3D capable, with a 480Hz drive for minimal 3D crosstalk, no shuttering glasses are supplied (it's compatible with the RF standard). If you feel like investing in the third dimension, you can also convert 2D to 3D, although I struggle to think when this might be appropriate.

'There's visual snap here – the cinematography of *Band of Brothers* looks gloriously dynamic'

The EH-TW5300 offers three tiers of frame interpolation of varying strength. Benefits of using any, though, are low. With a test pattern moving at 6.5ppf (pixels per frame) none of these modes actually improve moving detail resolution. Detail brickwalls consistently at around 700 lines. There are benefits when it comes to horizontal panning and judder, which smooth considerably on the Normal and High settings. Unfortunately motion artefacts are also introduced, as well as that telltale video sheen (AKA the soap opera effect). A mood killer for movies.

When it comes to visual snap, the EH-TW5300 fares well. The monochromatic cinematography of *Band of Brothers* looks gloriously dynamic. Snow gleams white,

buildings and trees are bleached grey; the contrast with overcoated troops is striking.

However, such extremes cause the projector's auto iris to grind loudly into action. This is immediately resolved by deactivating it. Perhaps surprisingly, this doesn't extract a heavy contrast penalty.

Black level performance is acceptable, particularly given the price. In a fully dark room, it's certainly dark enough to convince, revealing realistic shadow detail. Colour accuracy is reasonably good, although when Hellboy confronts the Golden Army, he looks more orange than devilish red. That said, his steampunk adversaries are suitably golden.

The PJ has no problem delineating fine detail and texture, perhaps due to a new noise-cancelling chip Epson has introduced into the range. In *Inception*, DiCaprio's team trip from a plane to rain-drenched imaginary cityscape. The image is a feast of texture and colour, from yellow cab to sodden suits. The Epson nails all this with tangible depth and clarity. Peering deep into Christopher Nolan's illusory world, it's all too easy to believe that this sells for more than its £580 asking price.

Curiously, the IR codes for the EH-TW5300 actually clashed with the Sony Blu-ray player I had hooked it up to, causing the disc spinner to navigate when I was trying to control the PJ.

The onboard sound system is useful for convenience hookups where a big image outweighs audio performance – perhaps a late-night gaming bout of *Fallout 4*. Of course, I'd recommend a full 5.1 sound system if you want to combat the projector's fan noise.

Worth closer inspection

The EH-TW5300 can be considered fair value and worth closer inspection if you're after a general purpose PJ for media duties. It casts a good-looking Full HD image for a bargain price – sharp and with high levels of contrast. The small form means there's not a lot of noise management available, which for serious cinema rooms could prove a deal breaker, but if you can cope with or cure that, then it's a bit of a 1080p steal ■

HCC VERDICT



Epson EH-TW5300

→ £580 approx → www.epson.co.uk

→ Tel: 01952 607 111

HIGHS: Compact form factor; cinematic image with solid clarity and contrast; decent price tag

LOWS: Noisy runner; no 3D glasses supplied; limited motion resolution; no lens shift

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★



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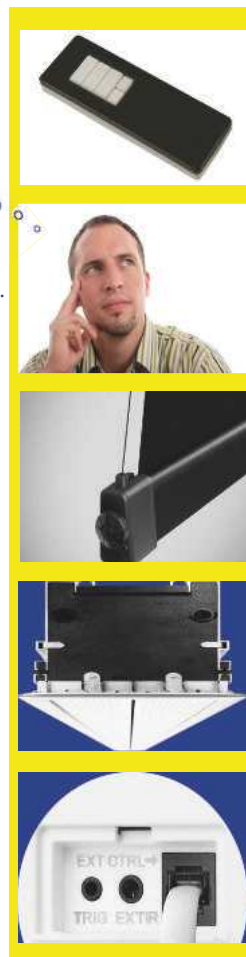
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Premium box of tricks takes time to master

Adrian Justins gets to grips with Plato's multi-talented Entotem and discovers there's plenty to enjoy despite the unit's operational complexity

AV INFO

PRODUCT:
Audio/video server/
player with built-in
stereo amp

POSITION:
The debut offering
from Entotem

PEERS:
Imerge MS1-3D;
Custom-built
PC system

HAILING FROM DERBY, Entotem is a new name on the AV scene, a company setup by four entrepreneurs who wanted to create a cutting-edge digital product that would satisfy analogue audiophiles. The Plato is a 2TB-packing multimedia system with a 2 x 45W amplifier. It embraces 24-bit/192kHz hi-res audio and HD video, it can digitise from vinyl and cassettes and rip CDs (up to 50,000 at 16-bit/48kHz WAV quality), plus it can connect over a network to DLNA/UPnP servers.

The home cinema side feels to me a bit like an add-on but nonetheless Plato allows you to stream multiple video files to more than one playback device, in HD quality. The lack of 4K compatibility belies the Plato's audio-centric nature, although the company says that the modular construction makes it fully upgradeable so UHD compatibility could feature at some stage. There's a single HDMI output and two optical audio outs for hooking up to a TV or soundbar, etc. Router connection

is non-wireless Ethernet, so the unit will need placing within cabled reach of your hub.

Elegant AV

The Plato box is one of the more elegant-looking bits of AV kit on the market, thanks to its curved edges, lack of physical features (there's only a power button, USB jack and LCD display on the fascia) and high-quality lacquer finish (a range of colours is offered).

Rear inputs consist of a stack of analogue and digital connections with four line-level inputs (including a phono stage for vinyl ripping), one coaxial and three optical jacks. USBs provide expansion storage possibilities and there's a power amp pre-out plus high-end plug-and-twist Neutrik stereo speaker sockets. There's a lot of flexibility here.

Bereft of any physical buttons and with no handset, the unit is best operated by tablet app (Android and iOS). It takes a bit of time to get your head around it, principally because of the

potential for confusion over what you're controlling. Lag can occur whilst the Plato, controller and devices get into sync.

I sometimes found myself trying to output audio to listed devices and drawing a blank.

I also found myself streaming to the TV simultaneously over the network and via HDMI with the screen appearing only once in the drop-down list of devices. A Samsung TV appeared twice sometimes and on one occasion I could hear Kate Bush coming from my soundbar but artwork for Steely Dan appeared on the TV screen. Hmm. Entotem says it's keen to fix such teething issues.

'In terms of video file compatibility the Plato seems all-embracing, although it turns its nose up at 4K'

You can choose to stream different content to different devices on the network – say a movie to your TV, classical music to your network speaker in the bedroom and 'net radio to a tablet in the kitchen.

In the Plato's library you can choose to view content by artist, album, genre, or video (where movies also appear). Everything is displayed in a grid, alphabetically, with screen art quite large. There's no list view option but you can search for individual tracks.

Let's get physical

You can't import content of any type onto the Plato's HDD over a network; it has to be done using a physical connection. In the case of audio files that could be a CD deck or phono stage connected to the digital or analogue inputs respectively, where the Plato will perform the ripping and indexing part of the process. Movies can only be copied onto the Plato from an external flash drive. In other words, you can't use Plato to directly rip DVDs or Blu-rays, but it will lap up files that have previously been ripped or downloaded to a

computer and then dumped onto a drive.

You have to use the Plato's touchscreen to perform the copying process as it can't be done using the app controller. This feels rather antediluvian and is a bit of a bore if you have a lot of files to copy – long pressing on each one, selecting copy and pasting to the HDD.

Importing music from external sources is easier. The app can control the ripping process, which is much more refined and versatile. You can also delve into the parameters and choose the bitrate (16- or 24-) and sampling frequency (48, 92 or 192kHz), with the Plato creating a hi-res FLAC file by default.

Start playing a CD and Gracenote will head to its database and show the artwork in the Now Playing tab. There's a digital peak level meter that Entotem recommends you use to ensure that the recording isn't going to distort. Volume trim, balance trim and audio delay can all be tweaked. One bind is that by using external transports (a built-in CD drive would have escalated the cost of the unit) the ripping process has to be done in real time, plus Gracenote sometimes picks the wrong album name and artwork for certain tracks, especially on compilation albums. That said, it's possible to edit artwork, names and even track lengths.

In terms of video file compatibility the Plato seems all-embracing and I had good success using the app to stream AVCHD, DivX, M4V, MKV, MOV and MP4 files over DLNA to a TV.

Performance-wise, all video files appear to share the quality of the original digital copy. I was chuffed with an MP4 rip of *Jaws*, which dazzled more than Quint's shark-hunting credentials in terms of clarity. Colour fidelity and noise suppression are good and sonically it's as clean and clear as the beaches on Amity Island. Currently Plato outputs audio in PCM; Entotem says that it will soon have the licence to output Dolby Digital on HDMI (which will be a firmware upgrade). Music rips exhibit all of the texture and energy of the original source.

Overall, this is an interesting product. Its smart device OS throws up some challenges and there are network lag issues that need ironing out, but in terms of features and quality there is a great deal to enjoy. But at present I do think it makes a lot more sense for audio enthusiasts than home cinema users ■

ON THE MENU

- The Plato employs both a front-mounted TFT LCD touchscreen and app for operation. Both take some time to get used to, in part because of the myriad features the unit supports. The product launched with Android support – Apple's iOS is a recent addition

SPECIFICATIONS

HDD: 2TB

AMPLIFICATION: 2 x 45W

CONNECTIONS: 4 x analogue stereo phono inputs; 3 x digital optical inputs; 1 x digital coaxial input; 1 stereo phono output; 2 x digital optical outputs; 1 x HDMI; 3 x USB; stereo Neutrik connectors; Ethernet jack

AUDIO FILE SUPPORT: FLAC; ALAC; MP3; M4A; PCM/WAV; AAC; AC3 (via forthcoming update)

VIDEO FILE SUPPORT: MPEG-2; H.263; H.264; AVCHD; DivX; M2TS; M4V; MKV including subtitles; MOV; MP4; MTS; WMV; XVID

REMOTE CONTROL: No (app controlled)

DIMENSIONS: 370(w) x 130(h) x 300(d)mm

WEIGHT: 14kg

FEATURES: Android OS/ Apple iOS controller; 24-bit/192kHz recording from analogue sources; Gracenote database; 5in TFT LCD display; selectable bitrate and sampling frequency; artwork, track name, track length editing; stream/output to multiple devices

The Plato can be hooked up to multiple devices



HCC VERDICT

Entotem Plato

→ £3,600 approx → www.entotem.com

→ Tel: 01332 291972

HIGHS: Hi-res FLAC recording from vinyl; CD ripping; streaming of different content to multiple networked devices; file support

LOWS: Laborious video file copying; network lag issues; lack of 4K compatibility; no in-built CD drive; premium price

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

Scare up your TV

Cambridge Audio is well known for its range of audiophile separates. Can it bring this high-performance ethos to the soundbar market? **Adrian Justins** has a listen



Cambridge Audio's TVB2 packs a trio of HDMI inputs

AFTER CAMBRIDGE AUDIO'S

exceptional TV5 soundbase (HCC #245) comes the UK company's latest soundbar, the TVB2, which again harnesses BMR speaker drivers for wide dispersion. Although unlike the soundbase, low frequencies here are handled by a wireless subwoofer.

The standout feature connections-wise is the provision of three HDMI inputs – with 4K passthrough – to minimise the number of cables cluttered round your AV station.

The remote control is good in the hand and attractive, but while it has dedicated buttons for each input it's awkward to pick out the correct low-profile button with the lights dimmed. In terms of operation, though, the TVB2 is first-class. Use HDMI ARC and CEC and it will switch itself off and on automatically, powering up promptly (within three seconds), which is rare.

AV INFO

PRODUCT: Soundbar with wireless subwoofer

POSITION: Sole soundbar in Cambridge Audio's TV speaker range

PEERS: Panasonic SC-HTB680E; JBL Cinema SB 350

Pandoran paradox

Performance is best summed up as refined and yet restrained. Dusting off my Blu-ray of *Avatar* I found myself simultaneously impressed and underwhelmed. On the one hand there is plenty of mid-to-high frequency clarity, and

the soundbar makes a decent fist of soundtrack details, such as the thud of Na'vi arrows on attack helicopters during the assault on the home tree.

And as the 'copters arrive *en masse* the subwoofer at first sounds like it can plumb the depths – the sounds of multiple engines are delivered with impact. But as they get nearer it becomes apparent that the subwoofer has no more to give and the effect is depleted compared with more muscular models. The woofer is pleasingly compact, but a larger driver might have paid dividends.

You can hear good detail among the shouts and screams of the Na'vi and their alarmed animals, plus the dialogue of Colonel Quaritch is clear over the mayhem around him and there is no need to resort to the TVB2's Voice mode. I did try switching to this during the movie and with TV broadcasts, and while it can initially seem inspired as the most vital component of any soundtrack gets A-list treatment, switch back to any other mode (the 'bar offers Film, TV and Music presets) and you realise how much more satisfying it is to hear more depth to other elements.

In terms of sonic imaging the Cambridge Audio does a good job of dispersing its sonics. There's less of a sweet spot here and more of a sweet patch, aided by an even spread.

Another classic test Blu-ray from the archives is *Fantastic Four*. Results are not dissimilar to *Avatar*. When Ben shouts

SPECIFICATIONS

DRIVERS: 2 x 2.25in BMR drivers
AMPLIFICATION (CLAIMED): 120W
CONNECTIONS: 3 x HDMI inputs (v1.4c); 1 x HDMI output (ARC, v1.4c); optical digital audio input; 3.5mm minijack input
DOLBY TRUEHD/DTS-HD MA: No/No
SEPARATE SUB: Yes, 6.5in (power not given)
REMOTE CONTROL: Yes
DIMENSIONS: 880(w) x 74.5(h) x 46(d)mm
WEIGHT: 1.63kg
FEATURES: aptX Bluetooth; NFC connectivity; Film, Music, Voice and TV presets; 4K passthrough; learning remote; supplied optical, HDMI and 3.5mm aux cables

HCC VERDICT

Cambridge Audio TVB2

→ £300 approx → www.cambridgeaudio.com

→ Tel: 020 7940 2200

HIGHS: Clean, compact design; slick HDMI CEC operation; impressive clarity from mid-to-high frequencies; good dispersion

LOWES: Bass feels underpowered; can't adjust EQ manually; remote control a bit plasticky

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

'You wanna be scared? Fine!' and roars at a suicidal businessman on a bridge I wanted the LFE to rattle the fillings in my teeth, but again the woofer failed to muster the necessary slam or extension.

Yet further up the dynamic range the TVB2 does a sterling job, with dialogue and effects sounding nuanced and clear. And for such a svelte 'bar it manages to generate a decent level of power, something that ensures music streamed over Bluetooth can get the blood pumping.

Solid offering

Cambridge Audio's TVB2 is a solid soundbar overall, and appeals because of its compact size, decent design and build, ease of use, HDMI implementation and quantum leap in sound quality compared with a TV's speakers. But if bass heft is your thing then you might find it lacking ■

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WHAT HI-FI?



Are apps really the future of TV?

The new Apple TV is markedly different than its predecessor, but **John Archer** still isn't totally convinced – the absence of 4K support is a short-sighted omission

AV INFO

PRODUCT:
Video/music/
gaming add-on

POSITION:
The fourth
generation of
Apple's set-top box

PEERS:
Amazon Fire TV 4K;
Roku 4;
Nvidia Shield

THE LATEST (FOURTH) generation of Apple TV is by far Apple's most fully-developed and feature-rich TV box. It no longer feels like a mere sidebar in Apple's product portfolio and introduces a number of genuine innovations that will doubtless be much copied in the years to come. But does it really support Apple CEO Tim Cook's assertion that 'the future of TV is apps'? I'm not sure.

Black box blues

The Apple TV's latest home isn't particularly Apple-like. Sure, it's got a glossy, black finish and an Apple logo, but its small, square, slightly chunky shape looks more at home in a science lab than a living room. For a company that is lauded for its design chops, it seems a bit bland.

Rear-side hookups comprise just an HDMI, a USB jack and an Ethernet port. The USB is only used for charging the new Apple TV remote; it can't be used for adding more memory to the 32GB and 64GB built into the two current options. In fact, adding more memory to the latest Apple TV isn't possible in any way, putting it at an disadvantage versus the Amazon Fire TV 4K box, which while only shipping with 8GB can have its memory expanded to 128GB via microSD.

More alarming for *HCC* readers is the inability of the HDMI board to output 4K video. Apple claims it took this line because it doesn't believe the 4K/UHD market is developed enough. At best this is arguable, at worst it's nonsense. There is already tons of 4K content available from Netflix and Amazon Prime that

The new Apple TV is actually a bit chunkier than its forebear

the Apple TV really should play – especially when key rivals like Amazon Fire TV and Roku 4 can.

Netflix is onboard the Apple train, as is BBC iPlayer. But note that (currently) Amazon Instant isn't, nor other UK terrestrial TV apps.

Things look up with Apple TV's new 'tvOS' operating system. The home screen uses the top row to show exploded content from the app you've highlighted in the row below. This proves exceptionally intuitive, and creates a

'Hugely significant to the success of tvOS is the integration of Apple's Siri voice recognition platform'

superb sense of a joined-up world. Even many third-party apps are designed to work with the new tvOS approach. So, for instance, Netflix (present in HD form) shows links in the top row to headline/popular programmes when you highlight its app on the second tier.

Not that the Netflix app appears on the main row of Apple TV by default. In fact, all of the key five app positions on the home screen default to Apple-related propositions. This is great if you're already heavily invested in other Apple hardware and buy most of your music and movies from iTunes. If not, then it's just as well that customising the apps that appear on this shelf is straightforward.

The menus all work slickly and stably, feature lots of appealing hi-res graphics, and continue to show signs of joined-up thinking beyond the home screen in the form of, say, links to other recommended films of a particular genre, or other films by key cast and crew members. It's a great UI to hang about in.

Say 'hello' to your virtual friend

Hugely significant to the success of tvOS is the integration of Apple's Siri voice recognition platform, as debuted on the brand's smartphones. This recognises the speech of pretty much anyone – even children – with impressive accuracy. You can talk to it quite chattily. It thus proves an invaluable aid in searching for specific apps or content.

Apple has even integrated Siri into the box's core functionality in some inventive ways; for instance, you can rewind, pause, and fast-

forward video just by telling the Apple TV remote that's what you want to do. Or you can ask Siri to call up info like weather reports, stock market prices and the latest scores for your favourite sports teams.

More welcome interface innovation comes with the rechargeable Apple TV remote. Despite being extraordinarily light and slim, it's easy to use courtesy of the supreme accuracy of its thumb movement trackpad and its use of a small number of buttons. The integration of a gyroscope and accelerometer make it more flexible than any other remote for gaming, too – although it's too small and limited in its functionality to feel like a comfortable replacement for a true joystick. It commands the box via Bluetooth rather than IR.

Don't worry, be 'appy'

Apple's decision to make the latest Apple TV an apps-based device has been embraced by the brand's development community with almost fanatical zeal. At the time of writing there are around 3,000 apps available for Apple TV, and this number is expected to balloon to 10,000 in double-quick time. On the one hand this is a triumph for Apple, making the new streaming box feel like a vibrant, bustling place to be. Except...

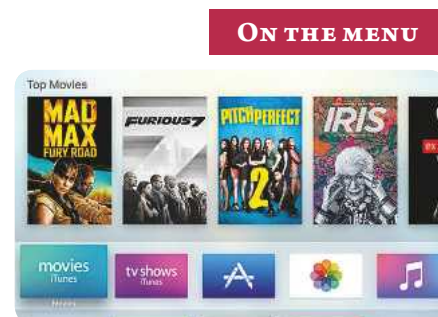
Is this really what you want from a TV device? Do you really want to be browsing thousands of apps as part of a TV rather than an iPhone or iPad experience? A huge proportion of the apps you'll be trawling through are little more than souped-up versions of iPhone and iPad games. At least Plex is there for home media streaming.

The more time I've spent with the Apple TV and the more its content offering has grown, the less convinced I've become that typical TV users really want the app-fuelled approach it offers. Frankly, I'd trade a couple of thousand of its apps for 4K video support, even though the Apple TV's HD pictures and digital sound (powered by the onboard dual-core A8 chip)

are both of a decent quality.

I've gradually found myself using Apple TV less and less, preferring to return to the simpler but – I'd argue – more relevant (especially in that they include support for live TV broadcasting) and focused efforts of the smart TV platforms of LG, Samsung and Panasonic.

Apple TV in its current form joins Android TV in persuading me that less is more where smart hubs are concerned. But it might be a different story if tvOS arrives in an actual Apple television set one day ■



→ The new tvOS interface is a real hit, with its hierarchical presentation making exploring options fun and fast. And Siri voice control and the trackpad remote make overall operation even slicker

SPECIFICATIONS

CONNECTIONS: HDMI v1.2; power input; USB charger for remote; Ethernet port; integrated Wi-Fi and Bluetooth

AUDIO FORMAT SUPPORT: AAC (16-320 Kbps); protected AAC (from iTunes Store); MP3; Apple Lossless; AIFF; WAV; Dolby Digital/Dolby Digital Plus (to 7.1)

VIDEO FORMAT SUPPORT: H.264 (1080p60); M4V; MP4; MOV

DIMENSIONS: 98(w) x 35(h) x 98(d)mm

WEIGHT: 0.425kg

FEATURES: New tvOS operating system; thousands of apps; touchpad remote; gyroscope and accelerometer in remote to support gaming uses; available in two memory sizes; limits individual app download to 200MB with apps having to download extra data as required; integrated Siri voice control

HCC VERDICT

Apple TV

→ £129 (32GB)/£169 (64GB) approx

→ www.apple.com/uk

→ Tel: 0800 048 0408

HIGHS: tvOS looks great and handles beautifully; Siri is a brilliant addition; the remote is very intuitive; easy install

LOWS: No 4K video support; heavy focus on second-rate gaming; who wants so many apps?

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

Making the curve mainstream

Jamie Carter finds high-spec images meet a low-spec chassis in this quirky, curved 32-incher

WHOEVER HEARD OF a curved 32in TV? Probably the quirkiest LED TV so far, the UE32J6300 is Samsung's attempt to make the half-moon-shaped TV go mainstream. But there's a problem; it's way too good, and priced accordingly.

The 32in TV is a commodity market, which is why the mould-breaking UE32J6300's four HDMI inputs, Full HD resolution, Freeview HD and the newest incarnation of Samsung's comprehensive smart hub are so welcome. Put the UE32J6300 in a study, a living area or a bedroom and you've got instant access to HD TV, full-res gaming, and everything from Netflix and Amazon Instant to BBC iPlayer and ITV Player apps – all via Wi-Fi or wired Ethernet. This Series 6 screen even has three USB slots, two highly listenable 10W speakers, a headphone jack and a detailed colour management system that



contains a 10-point white balance adjuster. It's gloriously over-specified.

That is has no 3D compatibility is not going to hurt the UE32J6300 one bit, but what does grate is the bulky, flimsy, plasticky build.

The curve adds nothing to the overall experience, but the good news is that Full HD pictures are highly detailed and graced with

Samsung's UE32J6300 is a feature-packed second-room screen

excellent black levels and luscious, well saturated colours. There's little motion blur to interrupt the detail, and viewing angles are fair. It's far cleaner with HD than it is with SD, which is soft and blocky, but by now the UE32J6300 will have won you over.

If you're after the best-equipped TV yet for a bedroom or kitchen, then this Samsung is unbeatable. But are you ready to pay for it? ■

HCC VERDICT

Samsung UE32J6300 → £380 approx

Overall ★★★★★

KEF MUO → £300 approx

A chip off the old block

Mark Craven can't afford KEF's flagship Muon speakers – this portable pastiche makes up for it

TO MAKE THIS Bluetooth speaker stand out in a crowded category, KEF has taken not only most of the name of its high-end Muon enclosures (£80,000 a pair, if you're interested) but a hint of the design ethos, too, with the grille mimicking Muon's curved form. Behind this sit a brace of miniaturized Uni-Q drivers, joined by a passive bass radiator. The cabinet itself uses an aluminium shell and

feels both impressively solid and surprisingly hefty. It can stand vertically or rest horizontally.

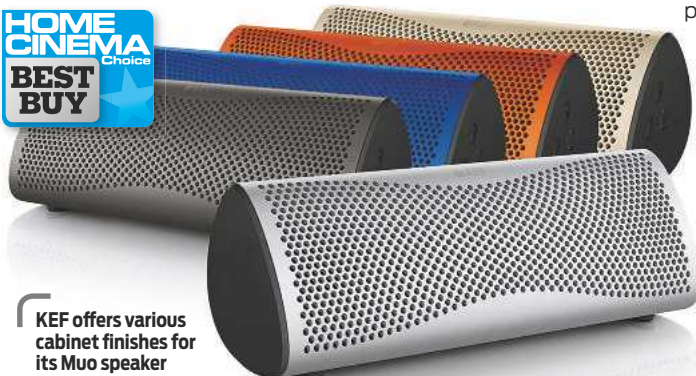
Bluetooth pairing (aptX) is quick. NFC is offered, as is a 3.5mm jack. The Muo charges via MicroUSB; give it three hours and it should be good enough for a day's listening. Two can be paired either in stereo or party mode, but this isn't a multiroom proposition.

KEF's speaker makes its comparatively high price tag seem worthwhile, and highlights the limits of cheaper rivals, with its superior performance. There's a fine balance across the frequency range, with purposeful, tight bass, full-bodied mids and highs that kiss your ears. With *Shine a Light* (The Rolling Stones), the Muo relishes the dynamic swells of Jagger and Co's epic, and

digs out crisp percussion and a punchy kick drum. Guns n Roses' *Sweet Child of Mine* has energy and drive. And these are just 256kbps rips; Slash's moody instrumental *Safari Inn*, as a 16-bit/44kHz ALAC file, sounds resplendent – all fluid funk riffs and wailing guitars. At the other end of the music spectrum, Adele's *Hello* is spine-tinglingly good, too, especially the way her up-front vocal breaks free from the confines of KEF's curved cabinet. While its sound can't be described as 'room filling', the Muo has more than enough power and high-volume composure.

Highly recommended, even at £300 ■

HOME CINEMA Choice BEST BUY



KEF offers various cabinet finishes for its Muo speaker

HCC VERDICT

KEF Muo → £300 approx

Overall ★★★★★

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Convenience stop on the tech superhighway

Blu-ray player, PVR functionality and media streaming in a single box – **Martin Pipe** tucks in

AV INFO

PRODUCT:
Combined Blu-ray player and Freeview Play PVR

POSITIONING:
Above Panasonic's PVRs and below its Blu-ray recorders

PEERS:
Panasonic DMR-BWT850; Samsung BD-H8900M

THE VERY FIRST Blu-ray player, Samsung's BDP-1000, lacked Ethernet. It was one of the few without such connectivity, and therefore unable to let early adopters sample the delights of BD-Live. Of course, BD-Live turned out to be pointless, but an ability to connect to your home network, and the 'net, wasn't; BD players were soon offering networked playback and a range of TV-like smart features, including, ironically, access to the on-demand services that are threatening physical media.

Panasonic's DMR-PWT655 can do all of this and more. The network player of this slim-line and distinctly house-styled machine is DLNA-compatible; the handset totes a shortcut key to a Netflix portal; playback of 4K (not BD) content (and upscaling) is proffered.

And it's a recorder, too. Inside this combi deck sits a twin-tuner HD PVR with 1GB of capacity. That's a lot of recorded telly; the best part of 2,000 hours with appropriate configuration (under 300, if your viewing is entirely best-quality HD). The PWT655 is also one of the first PVRs to implement the new Freeview Play standard, which – like rival YouView – allows you to go 'back in time' through the EPG by up to a week. At first this feature wasn't available, but the firmware update landed during my review period (if you've bought one of these decks, check its system is up-to-date).

The basic functionality is similar to that of YouView, although the implementation is rather different. Pressing the handset's Freeview Play button displays a list of the catch-up services currently available – BBC iPlayer, ITV Player and 4oD (Demand5 is 'coming soon' according to Panasonic), in addition to BBC News and BBC Sport content. As for retroactive schedule browsing, go back with the EPG and the left-hand section of the screen is filled by a grid containing the currently selected channel's previous shows. Each past day's programmes occupies a column. As with YouView, selecting one of its programmes shortcuts to the relevant catch-up service. Freeview Play definitely works, but personally speaking I prefer YouView's neater 'scroll-back' EPG.

Another neat 'net-enabled feature is Panasonic's TV Anywhere, through which recorded programmes can be streamed to Panasonic's Media Center app. Not BBC content, though – Panasonic explained the Beeb has opted out of the service. With accessible recordings (in this case from Channel 4) streamed to my Samsung Galaxy S4 'phone, pictures – although not HD quality – were perfectly watchable. It's neat to be out and about watching transcoded recordings that have been fed from the PWT655 in your living room.



Freeview Play integrates catchup TV with the Freeview EPG



Not enough? You can schedule recordings via the app, so if you've gone out in a hurry or are late home, and forgot to set the timer for *MasterChef USA*, you need not miss it.

The PWT655's readiness for all things digital doesn't always work in our favour, though. There's a complete absence of any analogue connectivity. So, for instance, feeding music or soundtracks to a non-digital stereo system is impossible without extra equipment. This also means that programmes won't break free of Panasonic's walled garden. You cannot connect your PVR to a DVD recorder via Scart, and dump the programme onto a disc in real time. When I pointed this out to Panasonic, I was politely reminded that Scarts have also been dropped from the brand's TVs. There's evidently no longer any demand...

Lock-in

What you do get is a facility whereby recordings can be transferred to an external USB HDD. The catch is that the disk is unreadable by a PC and it's locked to a specific PWT655. In the unlikely event that your unit develops a fault, if you want to access a drive containing a 'once-in-a-lifetime' recording (your turn on

'TV Anywhere, which allows recorded shows to be streamed to a smart device, is a neat, welcome feature'

Britain's Got Talent, for instance) then you're out of luck. Plug that USB drive into any replacement unit and it will be spurned.

Still, up to eight HDDs (up to 2TB in size) can be registered by each PWT655. And to be fair, Panasonic draws attention to its own DVD/Blu-ray recorders (which, speaking from experience, are very good) as alternatives for those who feel the need to backup their favourite TV. A new top-range model – the DMR-BWT850 (£600) – offers BD archiving.

The PWT655's recording modes are identical to those of the more upmarket Panasonic disc-burners. There's a DR (direct) mode that preserves subtitles, additional soundtracks and so on. There are also eight other modes (four of them HD) that trade quality for space, so you can cram more in. If you've selected one of these modes, the PWT655 will record your programme in DR, and then quietly convert it to the specified setting when in standby. Basic editing will trim away superfluous material, thereby reclaiming HDD space. Recordings are selected from a straightforward list that also recalls basic programme details. Other key PVR features include pausing live TV, digital teletext, Guide Link, 32-timer events, the ability to select any HD simulcast and automatic series recording.

The playback section is 3D-compatible, will accept SD cards/USB devices and supports a lengthy list of file formats. Some can be copied to the HDD and, from there, made accessible to other devices courtesy of an onboard DLNA server. Yet the PWT655's own recordings aren't on the menu, unless the client is Panasonic and compatible.

On the whole, the PWT655 is pleasurable to use. Integration could be better in some respects, though. The handset's subtitles button, for example, is only active for digital TV – engaging them for disc playback involves wading through menus. And the UI is a bit dour.

Hi-def TV images, especially live studio material, are clean, detailed and accurate in colour. Blu-ray, of course, is even better – artefacting was all but absent, and dynamic range wider; the murkier scenes of *Terminator: Genisys* fared well even when harsh lighting suddenly invaded the scene. Standard-def TV and DVDs can be excellent, thanks to some potent upscaling. Steve Coogan's *Saxondale* (DVD), for example, took on a near-HD sheen. Edges were, however, slightly exaggerated; manual tweaks are available in the picture settings menu.

Blu-ray soundtracks were simply sublime. The sheer atmosphere of the alien structure's interior (*Prometheus*) is done justice, its dripping water approaching uncanny realism. And when the crew get caught in a storm en route to the ship, complex detail is not swamped by sheer volume.

Plenty of interest

So there's certainly little to fault in performance terms here. I was also impressed by the broad range of features – especially in the networked domain, although it must be said that attempts to play some DLNA content were rejected outright (USB proved to be more accommodating). Freeview Play lives up to its promise. However, the lack of analogue connectivity – and all its implications for archiving – is a worrying trend. But overall, the DMR-PWT655 has plenty of interest ■

ON THE MENU



→ The Freeview Play EPG (pictured) doesn't feel quite as whizzy as the version found on Humax's FVP-4000T PVR – nor the rival YouView platform – but is simple to use. The rest of the DMR-PWT655's interface is similarly straightforward

SPECIFICATIONS

HDD: Yes. 1TB

TUNER: Yes. 2 x Freeview HD

CONNECTIONS: Aerial in/out; HDMI output; Ethernet; USB (rear and front); coaxial digital audio output; SD card slot; built-in Wi-Fi

DIMENSIONS: 430(w) x 59(h) x 210(d)mm

WEIGHT (OFF STAND): 2.4kg

FEATURES: Freeview Play with retroactive EPG; Media Center app with TV Anywhere; 4K networking/upscaling; Panasonic Diga portal (including support for BBC iPlayer, internet radio, web browser, Amazon Instant and Netflix); DLNA client/player and server; smart device 'media renderer' mode; 3D support; direct recording (DR) and eight conversion modes (4 HD, 4 SD); series recording; pause live TV; 32-event timer; copy to/from SD/USB (with some restrictions); format support including DSD/FLAC/MP3/AAC/DivX/MPEG/MP4/MKV/AVCHD/JPEG/MPO

HCC VERDICT



Panasonic DMR-PWT655

→ £400 approx → www.panasonic.co.uk
→ Tel: 0844 844 3899

HIGHS: Fine AV performance; Freeview Play offers healthy catchup; flexible recording; extensive file format support

LOWS: Analogue connectivity completely dispensed with; Media Center not supported by BBC; unglamorous interface

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

Boost TV by name, TV boost by nature

Adrian Justins believes JBL's modest soundbar gets the job done

NO WIDER THAN a budget Blu-ray player, the JBL Boost TV is about as compact as soundbars come. And its 30W power output is not that much more than the usual 20W offering found on most TV screens (in terms of sheer wattage) and nor does it have a separate subwoofer. However, its dual bass port design, cabinet shape, DSP and Dolby Digital decoding give it reasonable advantage in the sonic stakes.

The Boost TV offers a single optical input and has

Bluetooth for wireless listening from phones, tablets, etc, with the handy option to set automatic Bluetooth switching if a paired device starts playing music, plus you can add further JBL Connect speakers (with Bluetooth) to create a multi-speaker scenario, albeit of limited range compared with Wi-Fi models.

The blister button remote is a shocker, with titchy lettering and a vague response from the 'bar when adjusting volume, but you can teach the Boost TV to respond to volume commands from your TV handset. This would be my suggestion.

Plenty of clarity

The JBL's soundfield is understandably narrow but there's plenty of clarity to appreciate. The Boost TV picks out the individual elements of

Fargo's soundtrack (on Channel 4) with precision, such as a barn door creaking, crows crowing and horses baying in the background. Footsteps in the snow, a car door thudding and an engine turning over all add to the atmosphere of the show. Dialogue is nice and resonant, too.

The lack of sizeable bass drivers is apparent with more explosive material such as *The Expendables 3* (BD), where even a missile hitting the docks feels a bit flat and shoot-outs seem sonically cramped. Yet this 'bar is more about installation possibilities (it's ideal for a second room) than sheer performance ■



The Boost TV is only 370mm wide

HCC VERDICT

JBL Boost TV → £170 approx

Overall ★★★★★

BANG & OLUFSEN BEOPLAY A6 → £800 approx

Wireless audio living the life of luxury

The BeoPlay A6 is more than just a far-out fashion statement, reports **Steve May**

THE WORK OF Danish industrial designer Jakob Wagner, the BeoPlay A6 wireless speaker isn't just about cutting-edge aesthetics. It also employs some unusual acoustic engineering. Beneath its cloth cover are five drivers all steered by DSP algorithms. Sound processing modes for corner, wall or free-standing placement can be selected by dipswitches positioned within the cable well.

This may be a big speaker (it's more than half a metre wide), but the polymer chassis features a hand grip, so you can easily move it about the house. The A6 looks devoid of on-body controls, but actually has a (fussy) touch interface positioned along its top rim, which you can swipe for volume or source selection. The removable cover is available in Light Grey, Dusty Blue, Dark Rose and Dark Grey.

In addition to Ethernet, there's dual-band Wi-Fi, Bluetooth and AirPlay proffered. You can



play tracks from DLNA sources, or stream via Deezer, Tunes and Spotify Connect. File compatibility runs the gamut from MP3 to FLAC, but there's no DSD support. As part of the Beo-Link Multiroom system, it unites with BeoPlay and conventional Bang & Olufsen kit, and up to 32 devices can be shared on a network.

Performance is largely dictated by how it's installed. The A6 sounds best with grille and

There are four colour options to choose from for the A6's fabric grille

drivers facing forward. This offers a three-dimensional, articulate presentation that brings vocals to the fore. You can place it fabric-side up, but here it's a little too thuddy.

Each driver has its own digital amp module, and there's no shortage of premium welly. That said, the lighter you keep things, the more the A6 likes them. It's a refined, luxurious listen – think Simon & Garfunkel rather than Slayer ■

HCC VERDICT

Bang & Olufsen BeoPlay A6 → £800 approx

Overall ★★★★★

Control in perfect Harmony

Multiple zapper-phobe **Adrian Justins** gets to work streamlining his AV setup with Logitech's premium universal control system



The Elite offers a hub, remote and smart device setup

MORE UNIVERSAL REMOTE controls have passed through my doors than Friday night curries but I've yet to find one that has allowed me to ditch my myriad collection of handsets. One annoyance is that universal remotes often require multiple button presses to get to the command you want, since first you have to select the correct device. App-based remotes are even worse in this respect. And both types have a habit of making things more complicated than they should be. Step forward the Harmony Elite, which has tricks up its sleeve that make it the most advanced zapper the specialist brand has ever made.

The Elite is, in fact, a bundle of two separate Harmony products, namely the Harmony 950 remote (£200) and the Harmony Hub (£100), and Logitech claims it's compatible with more than 270,000 devices from around 6,000

manufacturers. It can control your lights, blinds, heating and home security according to custom schedules or in response to sensors. In other words it's a remote control for just about anything electrical in your home – assuming you've invested in smarthome gear

from the likes of Philips Hue, Nest and Honeywell (it works with a range of platforms including SmartThings, Insteon and IFTTT).

The hub receives RF signals from the handset and can control kit hidden from view in a closed cabinet with commands passed on using a built-in IR transmitter or one of two IR blasters. Setup requires use of either a computer (Windows or Mac) connected to the handset by USB or (like me) you can use the smartphone app.

This app is clean and uncluttered, with the home page divided into Devices and Activities. Setup is relatively simple: you enter the model names and numbers of your gear and the app asks you to test a few basic commands before guiding you on to the activities side of things. To watch TV I was easily able to instruct it to switch on a Samsung screen, Yamaha soundbar and Sky+HD box and tune in to BBC Two HD as my default channel. An icon-based EPG appears on the handset screen but I found its channels didn't tally with my Sky region and I tried and failed to edit the list.

You can name and create your own activities, allocating each one to some of the unused buttons on the remote, or you can activate them via the touchscreen. To set up a 'Watch Netflix' activity all I had to do was tell the app which kit to use and it automatically launched the Netflix app, bypassing my screen's smart hub selection process. An example of how universal remotes are fallible,

though, is quitting Netflix, which is hampered by an onscreen exit message that the Harmony didn't automatically deal with.

For watching movies I easily programmed the remote to kickstart the TV, Onkyo AVR and Sony BD deck, later adding a command so that the disc loaded from the home screen, allowing time for the box to boot up properly. And the Elite knows if the TV is on so skips executing the power button (which would turn the screen off).

The colour touchscreen responds to swipe-and-tap gestures for changing channels, fast-forwarding and adjusting the volume. This is great and addresses one of my main gripes because the remote automatically chooses the correct device based on the action. Change the volume and it controls the AVR, pause or skip forwards and it controls the BD deck.

This is a versatile, relatively simple and almost faultless alternative to using multiple separate remotes. Pricey, but impressive ■

SPECIFICATIONS

SYSTEM REQUIREMENTS: Wireless home network; PC, Apple Mac, smartphone or tablet for setup

DIMENSIONS: 54(w) x 192(h) x 29(d)mm

WEIGHT: 164g

FEATURES: Controls up to 15 IR devices; swipe-and-tap touchscreen; one-touch, activity-based control; display up to 50 favourite channel icons; rechargeable with charging station; separate wireless hub; online setup; compatible with over 270,000 devices

HCC VERDICT

Logitech Harmony Elite

→ £270 approx → www.logitech.com

→ Tel: 01753 870 900

HIGHS: Slick setup via app; good combination of physical keys and touchscreen; nice size and ergonomics; plenty of flexibility

LOWS: One or two minor operational issues; wrong EPG channels listed; plenty of rivals that are cheaper

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

AV INFO

PRODUCT: Universal remote/control hub

POSITION: Harmony's top product bundle

PEERS: One For All URC 8800; All those remotes on your coffee table



The sound of the past brought to life

Anyone for quadrasonics? **Martin Pipe** tries a gadget that will appeal to music-lovers with retro collections from the seventies. And it wants to beef up their CDs, too

AV INFO

PRODUCT:
Quadrasonics-compatible surround decoder with proprietary processing

POSITION:
Unique proposition in Involve Audio's product line

PEERS:
Nothing we can think of

WE TAKE MULTICHANNEL audio for granted, but not even AV old-timers who can remember the original Dolby Surround decoders were the first kids on the block. Furthermore, multichannel music predated the closing credits of a film soundtrack – never mind hi-res formats like DVD-A, SACD and Blu-ray audio. For domestic surround sound's beginnings, you need to go back to the early 1970s and the crazy world of quadrasonics.

To achieve the best real-time playback from most quad albums you needed, until recently, to acquire the sophisticated decoders of the era. Needless to say, specimens that still work are expensive and rare. The SM465 Surround Master from Australian firm Involve Audio aims to rectify that problem.

On the rear panel of this slim box are a stereo input, and no fewer than eight phono sockets containing the outputs. In one operating mode, the Surround Master will deliver Involve's two-channel virtual surround system – Two Speaker Surround, or TSS – to two of them. A neat trick is that the stereo input is passively routed to these automatically when the Surround Master isn't powered up. In the other mode, the sockets are configured for quad (4.0) or 5.1. Just connect these outputs to your amplification. Of course, you'll need an

amp/receiver with multichannel inputs. I used both an Onkyo TX-NR906 AVR and a 40-year-old Pioneer QX-949 quad receiver.

You may think the Surround Master apes older gear by performing Involve's proprietary decoding tricks in the analogue domain, but with more modern circuit techniques. Things are, however, more complex than that. Basically, the audio is fed into circuits that buffer and apply precise phase-shifts to the incoming stereo audio. The resulting signals are passed simultaneously to a pair of powerful chips that combine analogue-to-digital conversion, real-time DSP and digital-to-analogue conversion. Each of the Surround Master's two modes involves loading different DSP software-code at startup, so you have to 'power cycle' the unit after flicking the mode switch for the new setting to take effect.

The analogue outputs from these chips go to the eight rear-panel sockets via filters and buffer circuitry. The DSP is responsible for detecting spatial cues, extracting appropriate content and passing it to the relevant channels.

The Surround Master's 'Involve' process is claimed to work with the QS surround format, and lesser-known ones like Matrix-H that the BBC used occasionally for FM radio broadcasting in the late 1970s. It will also

deliver results from Ambisonic material, matrix-encoded (e.g. Dolby) movies and regular stereo audio. It will not give optimal results from SQ software, which involve claims is tricky to decode properly. As a result, the firm sells a separate model specifically for SQ use and owners of SQ-encoded vinyl LPs.

Note that Involve is swapping the Surround Master's casing from the basic-looking plastic one here to a slicker model in a blue chassis.

Getting surrounded

I firstly tried using the Surround Master's TSS setting with some regular CDs, and was on the whole impressed with what I heard. It seemed to extend the soundfield further into the room,

'I'm taken with this unique unit – it's audibly different to the surround modes on the average AVR'

and some instruments were given extra clarity. However, with lesser material – like mediocre cassette recordings – it can blur the soundstage and smear detail.

But it's conversion to multichannel that we're interested in. I tried a DVD of *Star Wars: Episode IV*, comparing the Surround Master and Pioneer quad receiver with my Onkyo given a multichannel bitstream over HDMI by a Cambridge Audio 751BD. That player's stereo analogue output fed the Surround Master.

Although much is going on and there's clear delineation between channels, the soundscape lacks accuracy relative to discrete surround. John Williams' orchestra – and, confusingly, some dialogue – is behind you! On other occasions, effects – like Death Star doors sliding open – don't seem to correspond to what's happening onscreen. This is a revealing test; music listening, remember, doesn't give you visual clues to what you should be hearing.

Sometimes, the system fares better. The 'whoosh' of Luke Skywalker's landspeeder is effective, panning correctly from rear-left to front-right. The background babble of the cantina sequence is also finely-etched, as are most busy scenes where so much is going on.

Now for music. Pulp's *Have You Seen Her*

Lately? sounded like a discrete quad mix, the shimmering keyboards taking positions in the rear channels with Jarvis Cocker at the front. Pro-Logic II sounded anaemic in comparison. One Eskimo's *Astronauts* also benefitted from the Surround Master's presentation, the expanded soundstage giving definition to acoustic guitars and brass instruments. At the close of the track, percussion passes with eerie conviction from one speaker to the next – it's almost as if it were mixed that way.

The sequenced synth that kicks off The Who's *Baba O' Reilly* moved with precision-timing across the channels, setting the scene for an immersive performance; Pro-Logic II, and other DSP modes, were far less exciting. A CD of Bach organ works was less successful, though, insofar that the Surround Master extended the organ's pipes to the rear channels; what I should have heard from those is the reverberative effect of the venue's acoustic. It was exciting, just not natural. Similarly, during a performance of Mozart's *Symphony No. 40* I felt as if I was sandwiched between two halves of an unconventionally arranged orchestra.

Enter the Matrix

And surround material? I dug out an old Matrix-H tape of a Genesis Knebworth performance, but this sounded muddled and indistinct. The tape, I suspect, was to blame. A DVD performance of another prog band, Gentle Giant, fared much better – the Matrix-H soundtrack had come directly from the Beeb's archives. The track *Free Hand* was certainly enhanced. Vocals were uncannily assigned to different speakers, while the positioning of vibraphone, organ and guitars helped to convey a definite sense of space.

The Surround Master was superior to my Pioneer's basic QS/RM decoder when it came to *Charlie Freak* from Steely Dan's QS-encoded *Pretzel Logic* LP. There was far less leakage between front and back, as the track's violin and sleigh-bells demonstrated. Another QS album, rock-opera *Moses and the Impossible Ten*, yielded an expansive soundstage, with the opening brass locked into the rear channels, and given more definition than offered by either the Pioneer or Pro-Logic II.

SQ-encoded LPs got an interesting, but inaccurate, four-channel mix. The alternative SQ version of the Surround Master (the SM-465SQ) was, however, fantastic – on a par, at the very least, with the last of the great

analogue decoders. I was in a position to compare the SQ-encoded Alan Parsons mix of Pink Floyd's *Dark Side of the Moon* with the four-channel version available in the *Immersion* box set, and the two were very close. The clocks at the beginning of *Time* appeared as long-lost sonic treats.

Another SQ album that fared well was Mike Oldfield's *Tubular Bells*. With Andre Previn's *Carmina Burana*, though, the effect was more subtle – the choral layers were better-defined than they were with the elderly Pioneer receiver's decoder. The newer Onkyo's DSPs, in contrast, tended to thicken the sound or add artificial ambience.

Overall, I'm taken with this modest, unique unit. It's audibly different to the surround modes you'll find on the average AVR. The Surround Master is surprisingly transparent – it doesn't alter tonal balance or add appreciable distortion. Purists may scoff, but the unit can add a dimension to stereo listening and give you fresh insights into your music collection.

For movies I would always recommend a discrete multichannel soundtrack. But for matrix quadraphonic material – SQ or QS – there's currently nothing around to touch the Surround Master. Retro enthusiasts keen to buy just need to choose the right model... ■

SPECIFICATIONS

CONNECTIVITY: Stereo phono inputs; 8 x phono outputs (can be used for 2.0, 4.0 or 5.1)

DIMENSIONS: 210(w) x 30(h) x 125(d)mm

WEIGHT: 0.3kg

FEATURES: Custom Involve DSP code; three-band processing; cables included; external power supply; two-channel bypass; two-channel virtual or 4.0/5.1 mode; QS, Matrix-H and Ambisonic (standard non-SQ model); SQ-I (mathematically accurate) and SQ-V (for compatibility with non-optimal sources) modes on SQ model

HCC VERDICT



Surround Master

→ £250 approx (Australian import)

→ www.involveaudio.com

HIGHS: Fantastic decoding of matrixed quadraphonics; stereo recordings given added depth

LOWS: No HDMI output for onscreen UI; no user adjustments; can't buy a single version with all decoding possibilities

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

The unit can output 2.0, 4.0 and 5.1 audio





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Portable supersound

The portable player category is hotting up nicely and Pioneer has just delivered a very impressive new contender. **Ed Selley** goes walkies with his multimedia

THE PORTABLE AUDIO

player market is being pushed with gusto, gripping the coat-tails of a growing interest in hi-res music, the proliferation of streaming services and our inability to put down our devices. The latest entrant to this arena is the XDP-100R from Pioneer, and it's a bit tasty.

This portable player has a few features that suggest Pioneer has been paying attention to criticisms levelled at rivals. First up, the XDP-100R is built around the Android platform but uses the more recent (and vastly improved) Android Lollipop OS, which makes for a faster and slicker UI. This in turn is mated to a 720 x 1,280 screen that occupies pretty much the entire front panel. So while audio is still the main focus, video is more than just an afterthought.

Internally, the Pioneer wields an ESS Sabre 9018K2M DAC with a matching (and rather less commonly encountered) 9601K headphone chip. All major audio formats are supported, and there's a promised update for hi-res upstart MQA due in early 2016 that makes the XDP-100R one of the first devices to officially support the standard (MQA will offer above-CD quality at streaming-friendly file sizes). Internal storage is a slightly stingy 32GB but thanks to two SDXC microSD slots

maximum capacity is a solid 432GB.

Everything is wrapped in casework that looks as if it is made from military spares but actually feels nice in the hand. As a final useful addition, Apt-X Bluetooth is supported.

Sonically, the Pioneer does a great deal to justify its

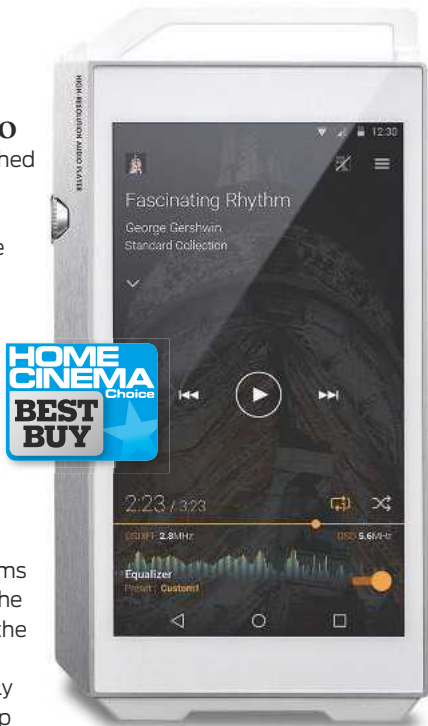
existence. The built-in music player app is a doddle to use and sounds clean and enjoyable. The player comes with Tidal, Spotify and Qobuz installed and while these can't use the in-built EQ system, they do a more than reasonable job with the added bonus of extremely easy music-management.

Hi-res and DSD material shows the Pioneer's strong side. There's a wonderfully natural and smooth presentation that springs good detail and impressive bass extension

from your digital library. Yet one downside is that compared to something like the Sony NW-ZX2, the Pioneer doesn't feel as effortlessly powerful. It has an excellent 160-step volume control but even with sensitive earphones at least 100 of them are pretty inaudible.

Performance with video is a cut above rivals and competitive with a similarly-sized mobile phone. My Ultraviolet rip of *Fast & Furious 7* was colourful and free from blurring, and the decoding horsepower of the XDP-100R means the movie's soundtrack feels bigger and more composed than would be the case on a smartphone.

The Pioneer is also more than up to the task of iPlayer and similar on-demand apps (there's access to Google's Play Store) and serves to both sound better and save the battery on your smartphone at the same time. And it is as a means of letting your phone just be a phone where this gadget really scores. The XDP-100R delivers excellent sonics – as you might expect given the asking price – but more than that, it does so with a clean, modern interface, natty build and decent screen. I found myself using it to take some of the strain off my smartphone as a mobile video and app platform as well as a hi-res audio companion. Nice work Pioneer ■



SPECIFICATIONS

MEMORY: 32GB expandable to 432GB via microSD slots

SCREEN SIZE/RESOLUTION: 4.7in, 720 x 1,280

AUDIO FORMATS: DSD; DSF; DSD-IFF; FLAC; ALAC; WAV; AIFF; Ogg-Vorbis; MP3; AAC; MQA (by forthcoming update)

VIDEO FORMATS: H.263; H.264 AVC; H.265 HEVC; MPEG-4; VP9

CONNECTIONS: microUSB input; 3.5mm jack connection; 2 x microSD slots

DIMENSIONS: 145.9(h) x 75.9(w) x 13.9(d)mm (including removable protective bumper)

WEIGHT: 203g (including bumper)

ADDITIONAL FEATURES: Google Play Store access; USB digital output; adjustable multi-band EQ; built-in speaker; ESS Sabre DAC (ES9018K2M); ESS Sabre headphone amplifier (9601K); low/normal/high gain; Android Lollipop OS; quad core APU; 16-hour battery life (claimed); aptX Bluetooth; Wi-Fi

AV INFO

PRODUCT: Android-powered digital audio/video player (MQA-ready)

POSITION: Currently one of, erm, one Pioneer portable audio players

PEERS: Sony NW-ZX2; Acoustic Research M2

HCC VERDICT



Pioneer XDP-100R

→ £500 approx → www.pioneer.co.uk

→ Tel: 0208 836 3524

HIGHS: Detailed and lively sound; good screen and OS; solid build and design

LOWS: Limited headroom; small supplied internal memory

Performance ★★★★★

Design ★★★★★

Features ★★★★★

Overall ★★★★★

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CENSORED

DIGITAL COPY

Mark Craven is in a rush to see movies before spoilers have ruined their surprises – even if that means dragging himself off to the cinema and leaving his home setup unused

WHEN I SAT down to write this column, I was planning on telling you about how I hadn't yet seen *Star Wars: The Force Awakens*. And, as of Dec 30th, this was indeed the case. The film had been out in cinemas for nearly two weeks and I hadn't witnessed a single X-Wing flypast or Wookiee yelp. I was a social pariah, and probably eligible for some sort of award.

Why hadn't I gone to watch it? Numerous reasons. Firstly, I was having a hard time working out which screening I wanted to go for – 3D? 2D? IMAX Laser? The choices open to the modern cinema-goer can easily induce panic if, like me, you're adept at not making decisions. Secondly, I had failed to persuade Mrs Craven that she should spend £15 to see the seventh film in a series despite never having watched the other six. And, thirdly, I have a home cinema.

So do you, I imagine. And one thing that's great about home cinema – the key part of it, really – is that you don't have to worry about heading out of your house to enjoy mega-budget movies with authentic audio and retina-searing visuals. **When *Star Wars* was cooking up box office records, I was content to wait for the Blu-ray release.** Hopefully in 4K.

So what happened? Spoilers. Or, rather, my fear of spoilers. I came to the conclusion on December 30th that the chances of me remaining blissfully unaware of the plot of *Star Wars: The Force Awakens* until mid-Summer were zero. Everyone was talking about the movie. Even people who had shown no previous interest in *Star Wars* were nattering about it. People who I hadn't pegged as sci-fi geeks were booking themselves in for midnight showings.

And they weren't just talking about it in the cinema foyer. I spend an awful (some would say

wasteful) amount of time online, and *Star Wars* opinion was everywhere I went, from Facebook and Twitter to major news sites and movie blogs.

This is the danger of the 21st-century home cinema owner. Major movie releases are now covered and analysed and dissected by so many people (often in BLOCK CAPITALS) that it's harder than ever to wait for a home media release and not know anything about a title other than, well, the title. It's not a development I'm keen on. I should probably invest in some Leia-style earmuffs.

Break out your credit card

In other news, start the car, cruise down the high street and hit the shops – it's January Sales time! This, I imagine, is what retail marketeers hope we're all thinking as we dispose of the Christmas tree over our next-door neighbour's fence. And some people must, because the January Sales are still an event despite Black Friday and Cyber Monday being fresh in the memory. People wait until after Christmas to spend big on domestic appliances, soft furnishings and, of course, AV gear. Concerning the latter, is there any genuine value to be found in the Sales? Are there stone-cold bargains to be bagged?

A peruse of an electronic retailer's website throws up its TV/Home Entertainment sales section, and there are discounts aplenty. To the uninitiated, it must look like an electronics El Dorado, where some post-Christmas anti-Scrooge has slashed ticket prices with only the needs of the cash-tight consumer in mind. Yet to someone who has half an eye on the AV world, much of what's on offer seems to have been too expensive in the first place... ■

*Do you go out of your way to avoid movie spoilers?
Let us know: email letters@homecinemachoice.com*

Mark Craven couldn't buy anything in the January Sales even if he wanted to as he spent all his money at Christmas on Orange Lindt





FILM FANATIC

More big blockbusters are on their way to Ultra HD Blu-ray. Yet **Anton van Beek** discovers that he probably isn't as excited as he should be, thanks to the current strength of regular BD

IT'S FINALLY HAPPENED. At long last, one of the major Hollywood studios has announced a lineup of Ultra HD Blu-ray discs that doesn't make me think the industry is trying to undermine the new 4K disc format right out of the gate.

Warner Bros. has revealed that its UHD Blu-ray launch slate will consist of *Mad Max: Fury Road* (pictured), *San Andreas*, *The LEGO Movie* and *Pan* – three out of four ain't bad. And by the end of the year it plans to have more than 35 titles available. Of these only the speaker-bothering SFX feasts *Man of Steel* and *Pacific Rim* have been confirmed – expect *Batman vs Superman: Dawn of Justice* to turn up, too.

Warner's lineup certainly appears more compelling than the likes of 20th Century Fox's *Fantastic Four* reboot (head over to p103 for our thoughts on that turkey), or Sony Pictures's *The Smurfs 2*, when it comes to **discs that you can actually enjoy as well as using to show off your flashy new 4K setup.** So why am I still not psyched but the Ultra HD Blu-ray format?

Well, unlike the commentators and naysayers you'll come across online, it's got nothing to do with the fact that it's yet another physical format. While it's undeniable that streaming has improved to the point where it's possible to deliver acceptable 4K video (providing your broadband provider offers sufficiently mammoth bandwidth), it still falls short of what physical media is capable of providing, both in picture and audio terms.

Then, of course, there's the small matter that buying a title on an actual disc ensures that you can access it whenever you want. Streaming services such as Netflix regularly lose films and TV shows from their libraries due to rights expiring. Nor am I particularly bothered by the cost

implications of upgrading my current setup with the necessary Ultra HD Blu-ray deck and 4K screen. Having spent decades now as a home cinema aficionado I've long accepted that the evolving nature of AV kit ensures that my hobby will act as some kind of bottomless money pit.

Bloody good Blu-rays

The truth is that the sort of titles that really enthuse me these days are precisely the ones that are least likely to turn up on Ultra HD Blu-ray any time soon (if ever). I enjoy a mega-budget blockbuster as much as the next person (well, maybe not popcorn addict Steve May), but what Blu-ray has really done for me is open a door to spectacular restorations of the sorts of flicks that had once been dumped onto VHS or DVD with little care or attention.

The fact that *Mission: Impossible – Rogue Nation* looks and sounds absolutely spectacular on Blu-ray (see p100) is to be expected. The fact that the largely forgotten 1987 slasher *Blood Rage* has been meticulously restored at 2K and given fan-pleasing treatment on Blu-ray (see p108) is cause for genuine celebration. And can you expect that film, or the likes of *Blood and Black Lace*, *River's Edge* or *Forty Guns* to undergo brand-new 4K restorations any time soon? Of course not.

These latter BD releases are all the work of small labels that aren't likely to rework their business model to include Ultra HD Blu-ray in the immediate future, due to the additional costs involved and the even more limited audience for such releases. But as long as they keep working their magic with traditional 1080p Blu-ray, then the format will stay close to my heart ■

Which films would you like to see released on Ultra HD Blu-ray? Let us know: email letters@homecinemachoice.com

Anton van Beek is only fooling himself. He knows that the moment John Carpenter's *The Thing* hits Ultra HD Blu-ray, he'll be the first in line to buy it!



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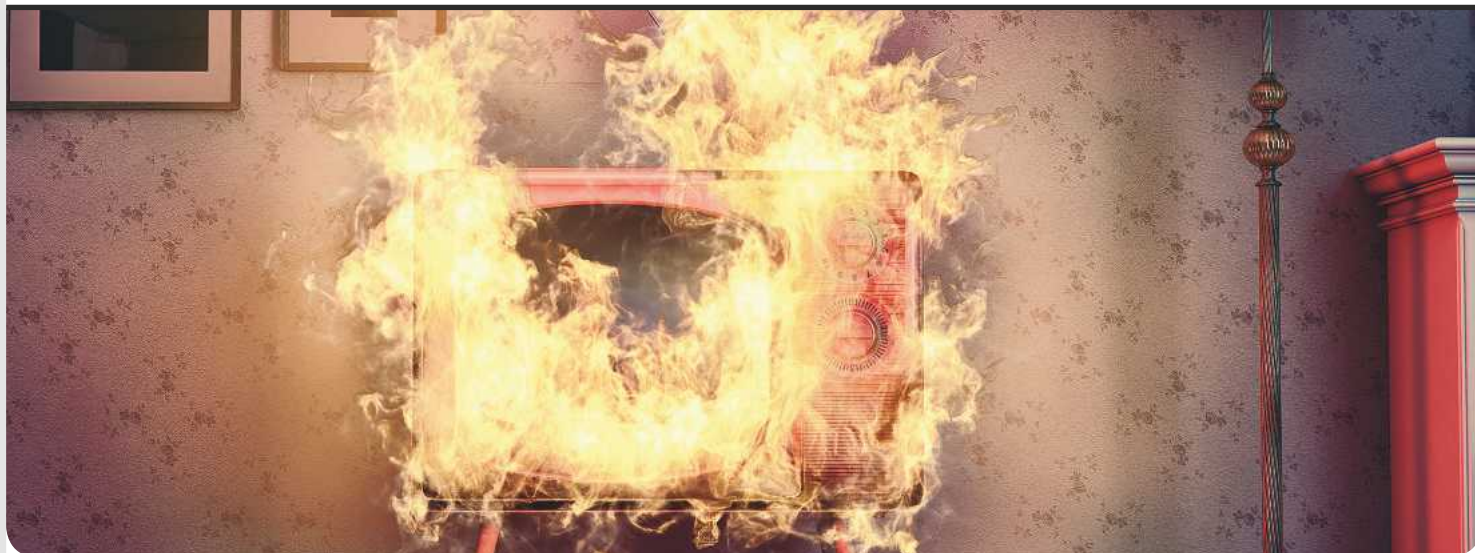
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PICTURE THIS

Remember screenburn? Calibrator **Vincent Teoh** explains why an OLED TV is the one electrical product you shouldn't switch off from the mains. Not that it will actually catch fire...

OLED TV IS shaping up to be the display of choice for videophiles, especially those who are seeking a replacement for their 1080p plasma TVs (PDPs) as the video industry gears up for 4K/Ultra HD. However, because the technology is substantially different from LED LCDs and plasmas, there are certain precautionary measures to be taken while running in an OLED set.

Like PDP, OLED is susceptible to image retention and potentially screenburn. Image retention is temporary ghosting seen after displaying high-contrast static images for an extended period; screenburn refers to permanent burn-in due to uneven ageing brought about by the same activities that cause image retention in the first place. The key difference is that image retention is transient, and the ghost images can usually be 'deleted' by displaying other moving images: later plasmas typically feature a 'screenwash' (involving a white bar scrolling across the screen) or pixel orbiter function (that shifts the pixels ever so slightly) to combat image retention. On the other hand, screenburn is irreversible.

The good news is OLED TVs are much more resistant to image retention and screenburn than even the last generations of plasma, partly because of differing factors behind the phenomenon. While image retention/screenburn on plasmas is caused by uneven wear of the phosphors, on OLEDs it's not so much due to ageing of the organic matter, but more because of drifting in voltage threshold leading to non-uniform light output.

Every OLED TV pixel consists of a light-emitting element, driven independently by a circuit made up of a switching thin-film transistor (TFT), a capacitor and a separate driving TFT. Upon receipt of a data signal, voltage is sent by the switching TFT to charge

the capacitor. The voltage charge held in the capacitor determines the subsequent amount of current passed on from the driving TFT to the light-emitting element, thus deciding the OLED pixel's light output.

Through different amounts of usage, the driving TFTs suffer from 'drifting', subtle changes in the voltage threshold at which each driving TFT starts conducting electrical current to the light-emitting element. Put another way, use an OLED display long enough, and the same voltage will not elicit the same response (and light output) as not all driving TFTs will have the same voltage threshold, leading to uneven light distribution and image retention.

High voltage rock 'n' roll

To solve this problem, OLED TV manufacturers employ a compensation method where the voltage thresholds of the driving transistors are periodically measured and then appropriately offset to produce a uniform light response, eliminating whatever image retention there is.

Because of the obvious difficulties in obtaining accurate measurements when the pixels are active (when the TV is on), the compensation needs to take place when the pixels are switched off. Indeed, LG and Panasonic OLEDs are designed to run their compensation cycle in standby after a specific number of power-on hours. The measurement/compensation process will be prevented from kicking in if the television is powered off totally. Most examples of OLED TV screenburn are from stores and trade shows where the displays are either always on or switched off from the mains. So always put your OLED TV in standby using your remote! ■

*Have you ever had a TV ruined by screenburn?
Let us know: email letters@homecinemachoice.com*

Vincent Teoh has worked as a video calibrator for eight years and can often be found in electronics shops trying to tweak TVs without being caught



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Feedback

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Old-school ambition

Hi. Are there any decent VHS/DVD combos still on the market?

Mick, via email

Mark Craven replies: Blimey, Mick – this question has taken us by surprise! While many are considering 4K screen upgrades and UHD Blu-ray players, you're after a deck that combines one obsolete format with another that doesn't support hi-def.

Not that we're judging. Legacy collections can be costly to replace, and not all titles that you may have on VHS and DVD are available on BD or from streaming platforms. And you may have home movies and recordings you want to play.



Anyway, whatever reason you have for hunting after a VHS/DVD combi (existing hardware given up the ghost?) you're out of luck unless you're prepared to shop second-hand, because VHS is leader than Darth Vader.

Feature-film VHS releases stopped around 2006 (once DVD was firmly established) and standalone playback hardware followed a couple of years later.

Combi decks that combine VHS with DVD (great for archiving tapes to disc) continued, but – again – only for a couple of years. We reviewed the Panasonic DMR-EZ49V in 2010; Toshiba's RDXV60 may have been the last UK-sold combi the following year.

My advice is to get onto eBay or elsewhere online and see what's about. In terms of

It's now quite tricky to lay your hands on a DVD/VHS combi deck

'decent', obviously image quality isn't going to cut the mustard in our modern age, but I assume that's not particularly what you're after. That said, the aforementioned Panasonic features 1080p output over HDMI, RGB Scart and USB file playback. It's a flexible editing/

★ STAR LETTER...

You don't have to be an early adopter

Following Steve Old's letter (*HCC* #255) I felt I had to write in with some advice to those of us getting angry about the messed up release of 4K Blu-ray, HDR etc. And my advice is to just not worry about it all!

Instead of being an early adopter I'm a late adopter. I didn't buy a DVD player until around 2001, and I didn't get a Blu-ray player until 2008 as I waited to see if HD DVD would last and there was a wide selection of titles to buy.

And I've had the same 'basic' setup ever since. A Full HD TV and Blu-ray player hooked up to an amp and 5.1 speaker system. The changes I have made – I've upgraded to an Oppo BDP-103EU and a Samsung smart TV – have been about ease of use and performance rather than

changing formats/standards or whatever.

I'm certain that eventually I will own a 4K TV and a 4K Blu-ray player, and I am considering adding more speakers to my system for Dolby Atmos/DTS:X, although these will be upfirs as my cinema room is also our living room. But I'll only do this once these new formats are widespread and, most importantly there are plenty of discs available to buy. There will probably be no new additions to my home cinema in 2016!
Andy Harris, Norfolk

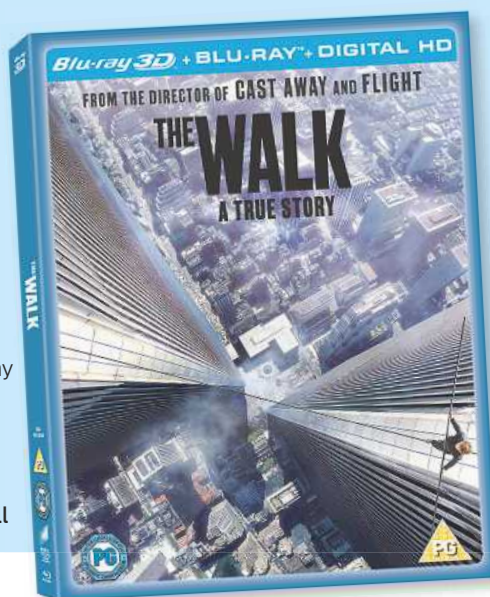
Mark Craven replies: Well said, Andy. It's all

too easy to get caught up in new format excitement and overlook the fact that current Full HD/lossless audio standards are pretty spiffy. Upgrades are great if you can afford them but in no sense essential (I think the last

must-have format change was the move from VHS to DVD as it changed the way we interacted with movies).

The step-up in quality with 4K is wonderful, and HDR is pushing this even higher. 3D sound formats are fun. Sky Q appears to be a slick upgrade. Early adopters will lap all this up in 2016, but there's no shame in enjoying what you have now.

Star letter-writer Andy grabs a copy of *The Walk* on 3D Blu-ray. Telling the true story of a young man who performed a wire walk between the World Trade Center towers in 1974, *The Walk* is available to buy on Digital HD from January 25, followed by Two-Disc Blu-ray 3D Combo Pack, Blu-ray and DVD from February 1, courtesy of Sony Pictures Home Entertainment.



burning machine, too, with chapter and playlist creation, various recording modes (to make the best use of media space) and support for DVD-RAM. There's even an in-built Freeview tuner.

Note that blank VHS cassettes are now as hard to find as Luke Skywalker (JVC recently confirmed it was stopping production) so if you need those you'll have to hunt around too.

Can I buy now, play later?

Do you know if the new 4K Blu-ray players will output a 4K picture at 1080p? This would be handy as it would enable me to start a collection of 4K discs before having to upgrade my projector. As you know, there are not many affordable ones on the market at the moment!

David Simpson, Lincoln

Jon Thompson replies: An interesting question, Dave. The answer is that they should (based on the specification), but with no way of testing don't take my word for it. HDMI handshaking ought to result in your display (in your case a projector) notifying the UHD deck of what it is capable of displaying. The player will detect that your PJ doesn't support HDCP 2.2 and will output a 1080p image.

Also, consider that UHD Blu-rays may possibly be sold as combi packs with Full HD Blu-rays, so you could be covered in that sense until you upgrade your projector.



Klipsch's RP-140SAs: two-way Dolby Atmos upfiring speakers

Can my smart TV be upgraded

Hi, I have hit upon a problem with my smart TV – it doesn't feel very smart any more. I have a 2013 Panasonic L42E6 and I'm a bit underwhelmed. I checked the system and it is up to date apparently. I have Netflix and BBC iPlayer but don't have 4OD, etc and there's no way to add them. The web browser is slow, too. From a user point of view it seems my two-year-old TV is out of date. I read about the Firefox OS on Panasonic TVs (and the Freeview Play models) and wonder why these systems can't be added to existing screens.

Gary, via email

Mark Craven replies: In this era of updatable firmware for mobile phones and computers, smart TVs can seem a little undercooked. Yet the hardware

architecture is often part of the problem why updates simply aren't an option on older sets. Also, knowing how costly it can be for manufacturers to secure apps for TV players, I'm not surprised that you're (still) missing the likes of All4 (previously 4OD). Maybe pick up a £15 Now TV box to give your Panasonic a leg up?

I've tweaked my Atmos array

Hi. Me again! I recently upgraded my receiver (and wrote in to tell HCC readers about it) to take advantage of 3D sound and more specifically Dolby Atmos. So I opted for the Denon AVR-X7200WA with Dolby Atmos and added the Auro-3D paid upgrade.

While I tried several setups for Dolby Atmos, including four Onkyo SKH-410 Atmos speakers, I still wasn't convinced, although I couldn't blame the receiver for doing its utmost best. So I figured I had to change things again. I read a lot about the new sound and setups for Dolby Atmos, but couldn't determine what I did wrong. The new 'sound' wasn't convincing me as I was hoping for. Was I expecting too much? Was my living room not right?

So I took the plunge and disconnected my upfiring Onkyo SKH-410s and went out and bought two pairs of the new Klipsch RP-140SAs. I connected these in a nine-speaker configuration (5.2 base plus four

heights – two on top of my M&K S-150 front speakers and two rears next to my M&K Column surround speakers). I ran Audyssey in a Dolby Atmos configuration and was happier with the sound. The Klipsch speakers clearly outperformed the Onkyos. They were down to 80Hz and I could here the difference in the soundfield already.

What happened next is what is really great, though: I selected Auro-3D (you can't switch between Dolby Atmos and Auro-3D automatically; you have to rearrange speakers manually for now. Hope Denon can solve this in a software upgrade) and ran Audyssey again. When I played the same demo material it was amazing. The whole soundfield woke up! I combined Auro-3D decoding and Klipsch Dolby Atmos upfiring speakers and it worked. It was open, detailed and very crisp and clear. I heard sounds in my demos I have never heard before.

I have a tremendous system now: a Dolby Atmos/Auro-3D receiver in a 9.2 configuration that is absolutely wonderful. My wife even stays up now for every movie or concert. So my message to you all is don't be afraid to try and retry until you get it right! In my experience, Auro-3D works absolutely fantastic with Dolby upfiring speakers. Who would have thought...

Wim Van den Broucke, Belgium



Smart TVs don't stay up-to-date

Mark Craven replies: Hello again Wim. I'm enjoying your reports on your continuing 3D audio adventure!

That the Klipsch RP-140SA speakers outperform Onkyo's SKH-410s comes as little surprise. The latter are very much an Atmos 'starter' proposition and use a single driver. The Klipsch models are two-way enclosures, and retail for around four times as much (although they don't appear to be on sale in the UK). My colleague Steve May had a similar reaction when auditioning KEF's R50 Atmos speakers (£600-per-pair compared to the £120-per-pair Onkyo upfirsers). Onkyo's speakers are ideal for a cost-effective Atmos array, but it's obvious that those with bigger ambitions should look at more advanced rivals.

Regarding Auro-3D, this is a tech that we're keeping an eye on. It'll be interesting to see if it's adopted by more AVR manufacturers this year and

if movie software becomes more prevalent. Sony Pictures (which released *Pixels* in Auro-3D on Blu-ray) certainly seems to have been swayed by your Belgian countrymen.

I want 2D IMAX Laser!

As a massive *Star Wars* fan, it should come as no surprise that I wanted to see the film at an IMAX venue. So, I booked tickets to go to the Melbourne IMAX. These were hard to get, to the point that we were seeing the movie at 6am!

Melbourne has recently upgraded to the new laser projection system. I was very keen and excited to see this system in operation. However, the movie was only being shown in IMAX 3D! I was very disappointed with this, but I guess IMAX has to pay for the new laser system with the higher ticket price 3D provides. This ties into your article regarding the utter demise of 3D as a format. How long will IMAX hold out on only showing the 'big' movies in 3D? Have they wasted



(no doubt) millions upon millions of R&D money on this system? Jeff, Bendigo (Australia)

Mark Craven replies: The IMAX Laser system undoubtedly cost a fair bit, but it can support 2D and already has – *Spectre* enjoyed a 2D IMAX Laser release. *Star Wars: The Force Awakens* was released in multiple formats (including 70mm IMAX), but I don't think 2D Laser was one of them.

3D will be a major part of IMAX Laser – the tech's brightness qualities give

stereoscopic content a boost – but keep your eyes peeled and you may see 2D releases getting the luxury treatment, too ■

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The Martian

Ridley Scott's spectacular sci-fi smash about a lone astronaut stranded on Mars touches down on Digital HD on January 25, followed by 3D Blu-ray, Blu-ray and DVD on February 8, courtesy of

20th Century Fox Home Entertainment. To celebrate we've got five Blu-rays up for grabs.

Question:

Which of the following classic sci-fi films was also directed by Ridley Scott?

Answer:

- A) *Aliens* B) *2001: A Space Odyssey*
C) *Blade Runner*

Email your answer with '**The Martian**' as the subject heading – and don't forget to include your postal address!



No Escape

Owen Wilson and Pierce Brosnan star in this action-packed thriller about an American family trapped in the middle of a violent political uprising. *No Escape* is available to buy now on DVD and BD and Entertainment One has given us five Blu-rays to give away.

Question:

Owen Wilson stars alongside which funnyman in *Meet The Parents*?

Answer:

- A) Adam Sandler B) Zach Galifianakis
C) Ben Stiller

Email your answer with '**No Escape**' as the subject heading – and don't forget to include your postal address!



Life

Robert Pattinson and Dane DeHaan star in this drama retelling the final weeks in the life of James Dean. The critically-acclaimed *Life* hits DVD, Blu-ray and On-Demand on February 1, and thanks to Entertainment One we've got five copies of the Blu-ray to dish out.

Question:

Which of the following is the correct title of a film starring James Dean?

Answer:

- A) *East of Eden* B) *South of Sinai*
C) *North of Nazareth*

Email your answer with '**Life**' as the subject heading – and don't forget to include your postal address!

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ENGINEERING THE BEST FROM BLU-RAY

Jon Thompson discovers that a premium, modded BD deck can have him playing 'spot the difference' with a Digital Cinema Package

I LOST INTEREST in Blu-ray players in the last couple of years. Most declined in quality as well as price, as the only market they're sold into is the mass market. A few higher-end players survive, such as Arcam's UDP411, but I'd argue the picture and sound quality still in no way compares to the likes of the Denon DVD-A1UD, a Blu-ray player seven years old that originally sold for £5,000. You're a bit lost if you want a real high-end reference-quality experience these days. Or perhaps you aren't, actually – the lines are blurring between home cinema and professional equipment, and here's why.

I recently bought a second-hand Marantz UD9004 player from eBay as it was essentially the same as the Denon A1UD but with improved analogue outputs. The machine that arrived had a badge on it saying 'CineMike'. I remember the eBay description said the player was 'CineMike-tuned'. Hmm. I fired it up and put in my favourite test disc at the moment – *John Wick* – and the nightclub sequence. It looked stunning. In fact, it was beyond that. It just looked right.

Let me explain what I mean. If you have a reference it can only ever look like the reference. If it doesn't, it simply isn't right. I was fortunate to have a Digital Cinema (D-Cinema) version of *John Wick* with a key that was still open at the time to compare it to. I found a friend who had a standard Marantz UD9004, so I set about doing a three-way comparison.

Now, you have to take into account that D-Cinema has a different white point than Blu-ray. D-Cinema's is 6,200K in XYZ colour space and Blu-ray is mastered to 6,500K (or D65) in REC.709. So a bit of clever remapping in my 4K Barco D-Cinema projector was done and the two basically matched.

I began by playing the D-Cinema clip. It looked stunning. Sounded great. Then I played the same clip on the off-the-shelf Marantz UD9004. It looked okay and sounded okay. You could tell it was Blu-ray; it was not as sharp and had a touch of noise and the sound lacked some guts and detail.

I then switched to the UD9004 'CineMike' edition and my first thought was that we'd put the D-Cinema clip back on. It was simply the best I have ever seen from a little shiny Blu-ray disc. The picture subjectively looked identical on a five-metre screen to the D-Cinema version I was using as a reference. There was no noise, it was sharp and on the sound front it actually appeared to have more resolution and a tighter bass. I was soon addicted and was

trying every disc I had to bathe in the quality I was experiencing.

I had heard of people modding AV equipment before, of course, and CineMike (which turned out to be a German company) isn't alone in doing it. It's a similar ethos to that of the car world, where, for instance, Brabus Works takes a standard factory-made Mercedes-Benz and modifies elements to get a performance way beyond the original.

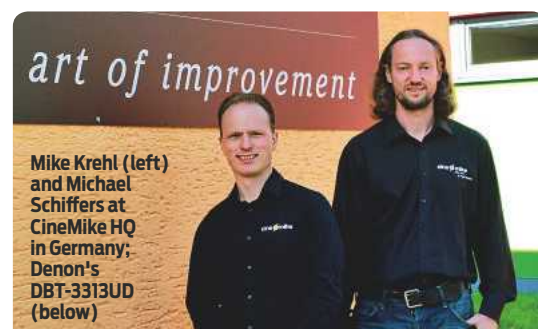
I had to know more about CineMike, so I emailed them. A guy called Michael called me the next day and after a long chat agreed to visit my screening room in Covent Garden. Yes, CineMike was actually a gifted audio/video engineer called Mike. He was in

'It was the first time I had ever seen home cinema equipment go head-to-head with D-Cinema gear and hold its own'

business with another guy called Michael. Perhaps this name is one of the qualifications to work there.

They brought two units to London with them – a tuned Denon DBT-3313UD Blu-ray player and a tuned Marantz AV8802A preamplifier. And it was time for more experiments.

First up, we ran the modded pre-amp through my Dolby CP850 processor. This is the reference professional AV processor – the mix in the dubbing theatre will be reviewed through this device and it's used to check the mix's compliance in the real world. A sound editor, mixer, director and ultimately producer sign off on this as the creative vision of the sound. The CP850 was doing all the room correction – it would be easy spending hours EQ'ing two units and never getting them exactly the same, so using the Dolby allowed a better evaluation of >



their outputs as they were going through a common EQ'd B chain. (The room was EQ'd to the Dolby X Curve specification, so it matched a film mixing suite as closely as possible as far as response was concerned).

Back with *John Wick* and the Digital Cinema version looked and sounded as it should. With the un-tuned AV8802A it sounded okay but comparatively lacking in detail; the soundstage seemed overblown and bass was flabby. In its class it is one of the best preamplifiers around, but it's not as good as the reference.

The CineMike-fettled AV8802A appeared as if from another world. It's sound was tight, controlled and the bass seemed to have extra presence. Timing seemed exact – it had rhythm and it had pace. It was perfect! In fact, in some respects, it outshone the reference, which I put down to showing the limitations of the cable used with the D-Cinema server. Note to self: upgrade AES audio cable. (Don't get me started on cables, by the way. All cables are not the same and just because one cable is more expensive does not mean it's better. On a budget Blu-ray player going to an OEM LCD TV you would find it hard to tell one cable from another, but on finally-tuned reference equipment everything has to work together to achieve the best picture and sound).

Both Blu-ray tests were on the CineMike DBT-3313UD. I compared it to an out-of-the-box 3313. That's a good player; the modded deck was exceptional. No noise, sharp, detailed. Plus, again, the timing and rhythm was spot on. I was in heaven. It was the first time I had ever seen home cinema equipment go head-to-head with professional D-Cinema gear and hold its own.

Euro stars

CineMike is based in an old school house in the German village of Kreis Aachen, close to the Dutch border and not far from Maastricht. Michael Krehl is a very quietly spoken video engineer, joined by his

'CineMike has also been beaver away on Sony's recent 4K HDR projector, searching for improvements'

business partner Michael Schiffrers. The company goes back a long way; the first product it tuned was a Pioneer Laserdisc player in the 1990s.

I was told CineMike looks at any AV product and sees if it can be improved. It has tuned projectors, power amplifiers, DVD players, Super Audio CD players and even a disc demagnetizer called the Acoustic Revive RD3. Yes, you heard me right – we're into that territory where everything literally comes with a price. You improve the performance of the player which shows up other weakness in your AV chain, such as your cabling or power block. It's a bit like creating a clean spot.



CineMike's Mike Krehl (bottom) mods AV separates, sometimes replacing components the size of a pin-head (middle)

So what does CineMike actually do? It rebuilds the machine from scratch. In the case of the Marantz AV8802A this involved removing and replacing 500 components, some as small as a pin-head (see picture) and replacing them with 'military-grade' ones. These are components where tolerances have been pretested and each is essentially identical. Each CineMike product is effectively hand-built. It's craftsmanship of the artisan type – think Stradivarius but in the digital age.

This, of course, does not come cheap. A standard Denon DBT-3313UD, for example, is £400. The CineMike-tuned version sells for £2,500. So this is equipment in an aspirational class, very much like Brabus Works. Likewise, the regular Marantz AV8802A costs around £3,500 but the CineMike version is £7,500. This isn't silly money but it certainly elevates the kit to the very high end of most people's ideas of home cinema. Yet if you are going to spend so much on building a premium-quality picture palace – like some of the beautiful examples in this magazine – why would you want to install anything less equipment-wise? It's such buyers that CineMike is targeting, and selling them HDMI and mains cables at the same time. The reason being that customers would put any cable on the system and wonder why it wasn't as good as when they auditioned it. So to maintain the experience CineMike has looked at the chain end-to-end.

Keeping up with AV trends

So what's next for the guys who are striving to produce the finest AV equipment money can buy? Well, they were at the IFA technology show in Berlin where they put on a superlative demo in a custom-built screening room using a new JVC e-Shift projector. They have also been beaver away on Sony's recent 4K projector, searching for improvements. As tech changes, the company is committed to keeping up.

So if you have a spare afternoon and a passport, I suggest you could do worse than jump on the Eurostar and go to CineMike's demo theatre in the old school house. Having spent over 25 years looking at pictures and cocking an ear to movie audio, I was bowled over by its work. The differences were like night and day ■



† Screen image shown is simulated

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Keith's room aims to deliver a knockout AV performance...

'You're out, I'm in...'

US-based *HCC* reader **Keith Rettas** has kicked his kids out of their basement playroom and moved in an 11-channel speaker system and three-tier seating. Smart move

Introduce yourself...

Hello, my name is Keith Rettas, aged 42, and I live in New Jersey.

How long have you been into home cinema – and what was the first setup you had?

Since 1995. That same year my father, brother and I went to an audio store and walked out with one of those huge wooden-framed 4:3 rear-projection TVs. We also bought a big-box Sony system with a receiver included, and a VCR player. That was the start of our surround sound. It was 5.1 and speaker placement was a mess, but I didn't know any better. I thought it was the greatest. It was just the fact we had a home theatre system.

When did you decide to build your own dedicated room?

Fast-forward to 2014 and I'm with my own

family. There's a spare room in the basement that used to be occupied by the kids when they were younger – it had a few couches, a TV and air hockey table, and a lot of empty space. One afternoon, I had an old projector that I had used to throw a movie up on a wall, upstairs. My youngest son and I loved it, and then the wheels started turning. Eventually I came up with the bright idea of moving the kids' couches and TV in the basement into another room for their PlayStation thrills, as the current larger space was really being wasted. They agreed, with some convincing from the boss (my wife), to move into another room. I then had my own dedicated cinema space!

So I began the process of reading about where to focus my budget, and what I could get by with. All of a sudden packages started arriving in the mail. The whole process took about a month.

What was the hardest part of the build, and is there anything you would do differently in the future?

The hardest part of the build involved the 'screen'. Since I wanted to keep expenses low, I researched extensively on the costs and benefits of a screen versus using a special screen paint. Through much questioning of myself, I decided to go with a painted wall. I know many have recommended this as a last resort, but I did find several DIYs online that had great results. Trying to make sure that there were zero marks left on the wall after you spackle, sand, prime and paint (six coats) was a time-consuming task! I still can see a few tiny spots that drive me nuts. It is a common problem/risk using a painted wall, but no one else sees it.

I built my own frame with wood from Home Depot, wrapped each piece in black velvet



A Sony Full HD projector creates 118in images

from a fabric store and turned it into a 118in screen. No one knows it's paint until they ask where I got the screen from.

I built the frame of the seat riser using 2x12 timber with two sheets of plywood on top. I used professionals for the carpeting as that would have been too tough for only one person to do. I installed the accent lighting under the lip of the riser with rope lighting purchased from Amazon, and ran the electrics under the carpet and out of the room through a little

'I had a great time putting this cinema together and will keep improving different areas as time goes on'

trench I cut in the pad underneath, so you don't see any bulge. Dimmers were installed for both the ceiling lights and riser lights.

There are two rows of seats with Lane Furniture recliners that cause you to fall asleep pretty quickly! In the back of the room is a third row with a bar and three stools. I'm looking to get the fabric replaced to match the room. All rows have full line of sight.

I painted the front wall in a flat dark brown to keep focus on the screen. The ceiling is a

drop down, so taking every single tile out and painting (in the same brown) was a brutally long process. Painting the grid added to that process but the end result was very satisfying as the ceiling tiles were originally white and had a reflective finish. I had a great time putting this together, and will keep improving different areas (room treatments, closing of the walls where the curtains are) as time goes on.

I do regret going the cheaper route on the ceiling speakers, and not matching them with the fronts, centre and surrounds. I can tell right away that there is a large tonal difference between those and the rest of the speakers.

Now it's all finished, what do you love the most about the room?

There is a lot I like, but I would say the screen size and clarity of the projector. It is a Sony VPL-HW40ES 1080p 3D unit. That is the first thing that pops out. Having a 118in screen, with a second seating row on a riser to give you that 'theatre in a home' feel, is what is most enjoyable.

I am probably one in the minority that loves 3D movies, and the Sony does an excellent job with virtually zero crosstalk.

So what AV kit did you install?

The initial system was a heap of leftover/spare parts, and after playing around/upgrading for >



SVS's potent PB13 Ultra subwoofer is the 'strongest I've ever heard for a home cinema,' says Keith. And the room also has a secondary JBL sub



Monitor Audio's wall-hugging Gold FX speakers are used for the surround channels in the cinema's 11.2-channel setup



about nine months I've ended up with the Sony projector, a Yamaha AV receiver and Monitor Audio Gold speakers (Gold 300s for front left/right, Gold C350 centre and Gold FX surrounds).

The rear surrounds are Bose bookshelf models, and the four in-ceiling speakers are from Polk. I've a SVS-PB13 Ultra subwoofer (this is what made my wife almost faint), plus a smaller JBL sub at the back of the room. I also have an Oppo BDP-103 deck and a Darbee Darblet that I purchased last year before I got the Oppo. In hindsight, I could have just purchased the 103D. Live and learn...

SHARE YOUR SYSTEM IN THE MAG!

IF YOU WANT TO BE IN HCC, you'll need to send us some hi-res images of your cinema room. Here a few tips for great looking pictures:

1. Go big. Set your camera to take images at the largest possible size, and at the highest resolution. Don't worry about cropping or resizing – we will make them print-ready.
2. Get in focus. Make sure your photos are as sharp and clear as possible. If you have one, use a tripod, or place your camera on a flat, steady surface and take pictures on a delay. The sharper they are, the bigger we can print them.
3. Let some light in. While we tend to watch movies in the dark, our

So you've got an 11-channel speaker array. Are you running Dolby Atmos?

Due to the limits of the Yamaha RX-A2040 receiver, I have my system configured right now as a 5.2.4. I have four speakers in the ceiling, and, yes, I run Dolby Atmos. I could use my rear surrounds, but I would have to shut off two of the ceiling speakers to do so.

When I choose to upgrade, the next model up, the RX-A3040, would provide the 7.2.4 configuration that my speaker layout is set up to support (I have an additional power amp).

How much have you spent on the room?

When taking into account audio and video hardware, the riser, screen, seats, paint, lights



Before repurposing the room as a multi-seat home cinema with dedicated screen wall and full-on surround sound, it was a more casual den (above) used by our AV-Holic's children

and dimming, around \$17,000. The speakers were the biggest expense.

What's next on your wish list?

It's a toss up between replacing all four ceiling speakers, or upgrading to an AVR that can support a 7.2.4 setup along with DTS:X.

What's your favourite bit of kit?

The subwoofer is the strongest I have ever heard for a home cinema. You immediately hear and feel the bass on Blu-rays when needed. I would also have to say a nice treat is the remote control for the lighting in the room so I don't have to get up!

What do friends and family think of the cinema room?

My wife has been very supportive. The kids love it. Friends and family love it when they come over, and always have a slew of questions on how I set it up. Those that watch a movie in 3D always enjoy it, but most of all, the seats, riser lighting and screen size are what people enjoy and comment on the most.

What discs do you use when you want to show off the system?

For the 3D, *Avatar* or *Penguins of Madagascar*. For audio, I usually use a few demos from Dolby Atmos (including *San Andreas*), or the new Roger Waters Blu-ray of *Amused to Death*.

And what are your favourite films?

Saving Private Ryan, *Goodfellas*, *Halloween*, most 3D animated films, the *Rocky* movies and a lot of war movies.

Lastly, are you excited by 4K and Dolby Atmos/DTS:X?

Yes very. I try to keep a growing inventory of Atmos movies, and some are better than others at using the new format. Waiting for an affordable 4K/3D PJ down the road ■

cinema systems look their best when they are lit. If you can shoot with natural daylight, do so. If your room doesn't get a lot of light (a garage conversion, for instance) then switch on whatever lights are fitted. Avoid using flash wherever possible.

4. Be thorough. Send photos of as much of the room as possible. Images of both the front and back of the room, the kit rack, speakers, seating, disc shelf, movie poster art... The more the merrier.

5. Don't be shy. We'd love a picture of yourself – unless you want to remain anonymous...

6. Show us more. Got pictures of your room before it was a cinema? Or snaps of work being done? We love to see these, too.

Email your selection of images to letters@homecinemachoice.com with the subject heading 'AV-Holic'. Provide us with some information about your setup and we'll then be in touch.



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→ **SOFTWARE HIGHLIGHTS** **EVEREST** Atmos soundtrack lifts this mountaineering drama to new heights **MISSION: IMPOSSIBLE – ROGUE NATION** Cruising for AV perfection on Blu-ray **STRAIGHT OUTTA COMPTON** Rap biopic is loaded with attitude **FANTASTIC FOUR** Comic book heroes turn out to be not so super after all **SHANE** Classic Western given classic treatment **AND MUCH MORE!**

Out of the shadows

Agent Carter: The Complete First Season
→ Walt Disney → All-region BD

Secret agent Peggy Carter (Hayley Atwell) gets her time under the spotlight in this cracking comic book TV series. But does *Agent Carter* also make for a Marvel-ous Blu-ray experience? See p106.



HCC RATINGS KEY...

Outstanding	★★★★★
Above average	★★★★☆
Acceptable	★★★☆☆
Disappointing	★★☆☆☆
Dire	★☆☆☆☆



Josh couldn't believe they'd finally finished hanging out the laundry



Scaling new heights in cinema?

Epic disaster film goes to show that real life can be far more dramatic and terrifying than fiction

→ EVEREST

This lavish disaster movie tells the true story of a 1996 climbing trip to the world's tallest mountain that ended in tragedy. Helped along by an impressive cast (including Josh Brolin, Jason Clarke and Jake Gyllenhaal), *Everest* keeps you wondering who, if any, will make it back alive – when you aren't gazing in awe at the mountainous spectacle that unfolds on the screen. This flick works hard to transport you to a terrifyingly alien and inhospitable part of our world, and succeeds.

Picture: From the crisp whites and blues of the snow fields to the vibrant colours of the cold-weather gear worn by the climbers, *Everest*'s AVC 2.40:1-framed encode is a triumph. Technically robust, there's not a flaw to be spotted in this Blu-ray's 1080p transfer, which succeeds in delivering a sharply delineated, finely detailed experience in even the harshest conditions.

A 3D version of the film is also available on Blu-ray, but wasn't available for review. If the spectacle of this 2D incarnation is anything to go by, there's a good chance that it will be really rather impressive.

Audio: Landing on Blu-ray with a Dolby Atmos mix (as it did in cinemas), *Everest*'s audio performance is, like its image, first-class.

While there isn't much in the way of distinct effects movement across the height channels, the movie's sound designers make extensive use of the extra speakers to immerse you in the action.



HCC VERDICT

Everest
→ Universal Pictures → All-region BD
→ £25 approx

WE SAY: Vertigo-inducing disaster film marries gripping drama with stunning visuals and Atmos audio

Movie ★★★★★

Picture ★★★★★

Audio ★★★★★

Extras ★★★★★

Overall ★★★★★

Highlights include the booming echo of drums and horns in the Tengboche Monastery (Chapter 3) and the sound of rain and sleet pounding the canvas overhead as the death-dealing storm reaches base camp (Chapter 14).

Even if you don't have an Atmos setup, there's plenty to enjoy about the track's core Dolby TrueHD 7.1 mix. There's consistent – and aggressive – use of the surround channels, dialogue is clear (well, as clear as it can be given the windy circumstances) and bass is remarkably potent. Turns out there's a lot of LFE up there...

Extras: *Race to the Summit: The Making of Everest* is an 11-minute overview of the film's production, looking at the real events that inspired it and the movie's route to cinemas. *Learning to Climb* (five minutes) does exactly what you'd expect from the title and looks at the training the cast undertook in order to act like experienced mountaineers.

Due to the impossibility of filming on the real location, *A Mountain of Work* (five minutes) takes a peek at how Everest was painstakingly recreated for the film, both digitally and through practical sets. Meanwhile, *Aspiring to Authenticity: The Real Story* (seven minutes) is a moving but all-too-short study of the events that inspired the film, with input from some of the survivors and family members of those who didn't return.

Finally, director Baltasar Kormákur provides a solo commentary. Lone chat-tracks can disappoint, but he does a creditable job exploring his own attraction to the story and the challenges faced in production.

The Transporter: Refuelled

Icon Home Entertainment
Region B BD → £18 approx



Say what you will about the original *Transporter* films, but at least they had Jason Statham in them. This reboot

doesn't, swapping out Statham for Ed Skrein, a man who struggles to make fight scenes look convincing, let alone the emoting he is also called on to perform in this dismal action flick. As dire as the film may be (and it's truly terrible), the BD itself is pretty snazzy, with a bright and detailed 2.40:1 1080p encode accompanied by a riotous DTS-HD MA 5.1 mix. Extras include three character featurettes and a trailer.



Love & Mercy

Sony Pictures → Region A/B BD
£25 approx



Running in parallel across two time frames, this superior musical biopic stars both Paul Dano and John Cusack

as Beach Boys co-founder Brian Wilson at different times in his life. Providing a unique spin on traditional genre tropes whilst simultaneously adding to your appreciation and of this musical genius, *Love & Mercy* benefits from a superb DTS-HD MA 7.1 soundtrack that brings Wilson's inner turmoil to life through its multi-layered construction. The film looks superb courtesy of a pristine 1.85:1 Full HD transfer, and boasts a smattering of informative extra features.



No Escape

Entertainment One → Region B BD
£25 approx



With a plot that looks like it has been ripped straight out of the last couple of *Far Cry* videogames (and is about as deep), this thriller stars Owen Wilson and Lake Bell as parents

who have recently relocated to a South-East Asian country, only for a violent coup to erupt on the streets on their first day there. Subtle and complex it ain't, but there's plenty to enjoy if you're in the mood for two hours of well-conceived thrills and spills. The film provides plenty of AV jollies on Blu-ray thanks to vivid 1.85:1 1080p imagery and punchy DTS-HD MA 5.1 soundtrack. Extras include a chat-track and interviews.



'Sod the constabulary', etc

Visceral hip-hop biopic goes straight from the hood to your home cinema setup

→ STRAIGHT OUTTA COMPTON

Taking its name from the group's acclaimed-yet-controversial debut studio album, this musical biopic charts the rapid rise and (far messier) fall of groundbreaking gangsta rap outfit N.W.A.

While the story itself may seem like typical rags-to-riches stuff, the film hits home in its efforts to paint a convincing picture of the social injustice that led to the emergence of the group's musical style and its incendiary, rabble-rousing lyrics. Backing it all up are some wonderful performances, not least Ice Cube's son O'Shea Jackson, Jr. who plays his father with a fascinating mix of compassion and indignation.

While not quite the warts 'n' all account it pretends to be, *Straight Outta Compton* is a powerful urgent slice of drama. And you might find the tunes catchy, too.

Picture: *Straight Outta Compton* employs a high-contrast visual style that pushes black levels as far as they can go, while pumping up highlights. While there are some minor issues with shadow detail due to crush, the AVC-encoded 2.40:1 HD transfer handles the source material well. Colours are strong (especially the amber-tint that pervades large parts of the film), sharpness and clarity are both very good, and there's plenty of fine detailing to soak up.

Audio: While the film's soundtrack isn't averse to traditional movie bombast (check out the police raid in the opening chapter) and generates plenty of urban ambience, where the DTS-HD MA 5.1 mix really comes into its own is with the music. Loaded with room-rattling bass, high-in-the-mix vocals and the



Yep, they've clearly got plenty of attitude

swirling roar of the crowds, the sound design for the concert sequences have just as much swagger and attitude as N.W.A. themselves.

Extras: Universal's hi-def platter includes both the original theatrical 147-minute version of the film and a 20-minute-longer Director's Cut. And *Straight Outta Compton* could have been even longer as evidenced by the disc's five deleted scenes (six minutes), and a deleted concert performance of *Compton's N the House* (one minute).

Next up are six behind-the-scenes featurettes looking at the origin of N.W.A. and the band's impact, shooting a pair of key scenes from the film, and the cast. While rather short (the longest clocks in at nine minutes, the shortest at two), they at least benefit from input from the real Ice Cube, Dr. Dre, MC Ren, DJ Yella and Lonzo Williams.

Rounding things out is an informative audio commentary from director/producer F. Gary Gray.



HCC VERDICT

Straight Outta Compton

→ Universal Pictures → All-region BD
→ £25 approx

WE SAY: An electrifying look at iconic gangsta rap outfit N.W.A. backed up by some impressive AV

Movie ★★★★★

Picture ★★★★★

Audio ★★★★★

Extras ★★★★★

Overall ★★★★★



Cruise control pays off again

DISC
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20-year-old franchise continues to flourish under the watchful eye of its leading man

DEMO SCREEN...

Mission: Impossible – Rogue Nation

Time code: 073.03 – 080.26



Drive hard: The streets echo with the sound of roaring engines as a motorbike-riding gang of baddies pursue Ilsa and Hunt through Morocco



Tight squeeze: This superb stunt sees Hunt take out two bikes by pulling a handbrake turn and slide his car sideways down a thin stretch of road



Parking problems: When Hunt flips his car end-over-end, the Atmos mix puts you right there with him, the sound of broken glass flying all around



On yer bike: The chase doesn't end there, though – Hunt jumps on a motorbike and goes racing through traffic, creating another Atmos audio showcase



Rebecca Ferguson kicks plenty of ass as the mysterious Ilsa Faust

→ MISSION: IMPOSSIBLE – ROGUE NATION

Picking up the tease that was dangled at the end of 2011's *Mission: Impossible – Ghost Protocol*, this latest sequel finds IMF agent Ethan Hunt (Tom Cruise) and his team trying to prove the existence of international terrorist group the Syndicate. To make matters more complicated, the IMF has been disbanded and absorbed into the CIA, with Ethan forced to go on the run in order to uncover the truth about the shadowy organisation.

Reuniting Cruise with *Jack Reacher* director and *Edge of Tomorrow* co-writer Chris McQuarrie, *Mission: Impossible – Rogue Nation* is a well-oiled and finely-tuned action blockbuster that doesn't really do anything new, but does what it does so effectively that you really mind one bit.

Indeed, in many ways the film is a refreshingly old-fashioned affair, remaining firmly committed to practical stunts, with Cruise doing the majority of his own. This pays off with the film's more spectacular set-pieces, such as the pre-credits plane stunt, which gains an even greater frisson of excitement from being able to see that it really is Hollywood megastar Tom Cruise hanging on to the side of an Airbus A400M Atlas as it takes off.

Backing up the leading man is a superb cast of new and familiar faces. Simon Pegg, Ving Rhames and Jeremy Renner return as Hunt's IMF team, while Sean Harris and Alec Baldwin make for intriguing new foils. However, it's Rebecca Ferguson who impresses the most, with her mysterious double (triple?) agent Ilsa Faust keeping both Hunt and the audience on its toes throughout the film's running time.

So *Mission: Impossible – Rogue Nation* is yet another superbly enjoyable instalment in this action series (only John Woo's *M:I-2* – released in 2000 – has disappointed so far) and leaves us demanding another outing. And we hope that Cruise can convince McQuarrie and Ferguson to return with him when it happens.

Picture: *Mission: Impossible – Rogue Nation* cuts an impressive figure on Blu-ray courtesy of a terrific AVC-encoded 2.39:1 Full HD encode.

Lensed by cinematographer Robert Elswitt (who also performed the same role on *...Ghost Protocol*), the film displays the same filmic, warmly coloured and finely detailed appearance that made its predecessor such as joy to revisit in HD. There are no obvious compression-related issues with the encode. Indeed, only the film's central heist sequence (Chapter 8) stands out as being less than perfect, with the mix of underwater shooting and CGI backdrops resulting in an unavoidable drop in sharpness and clarity.

Audio: This hi-def platter delivers plenty of audio excitement via its Dolby Atmos soundtrack (this defaults to a core Dolby TrueHD 7.1 mix if you don't have the necessary setup). While those additional height channels are mainly focused on atmospheric effects, they do add an extra sense of wraparound sonics to set-pieces like the underwater heist (Chapter 8) and the subsequent car/bike chase (Chapter 9 – see *Demo Screen* opposite).

Unsurprisingly, the disc's lossless soundtrack (in both guises) makes copious use of the more 'traditional' speaker array. There are precise and powerful positional effects regularly fizzing around, while the bass in the mix is of blockbuster-weight. Against all this, dialogue and score are well presented, with the opera fight (Chapter 5) showcasing both in a spectacular manner.

Extras: In addition to a lively chat-track from Chris McQuarrie and Tom Cruise, the standard single-disc Blu-ray release serves up seven featurettes exploring different aspects of the production. *Lighting the Fuse* (six minutes) explores the origins of the project; *Cruise Control* (seven minutes) discusses Tom Cruise's role as producer; *Heroes...* (eight minutes) looks at the main cast and their characters; *Cruising Altitude* (eight minutes) deals with the opening plane stunt; *Mission: Immersible* (seven minutes) does the same with the underwater heist (seven minutes); *Sand Theft Auto* (six minutes) focuses on the car/bike chase; and *The Missions Continue* (seven minutes) looks at the entire franchise and the call-backs *...Rogue Nation* makes to the earlier films.

However, franchise fans may wish to plump for Sainsbury's exclusive Blu-ray instead, which adds an extra hi-def platter containing nine further behind-the-scenes featurettes (with a combined running time of just over 50 minutes). Annoying, yes, but you could get some popcorn while you're there...



Tom Cruise performed the opening Airbus stunt himself without a stunt double



It's like Valentino Rossi and Marc Márquez all over again...



Hope you like the *M:I* theme tune, as it loops endlessly on the BD menu (below)



HCC VERDICT

Mission: Impossible – Rogue Nation

→ Paramount → All-region BD
→ £25 approx

WE SAY: Stunning picture and sound makes this *Mission...* a must on Blu-ray

Movie ★★★★★

Picture ★★★★★

Audio ★★★★★

Extras ★★★★★

Overall ★★★★★

ARCADE ACTION

Bigscreen home entertainment isn't just about movies anymore. Check out this videogame vying for time on your home cinema system...



Just Cause 3

Square Enix → Xbox One/PS4/PC → £50 approx

Although there are plenty of games that are as slick and engrossing as modern action movie blockbusters, there are few that are as enjoyably dumb. *Just Cause 3* is the exception. Like an '80s Chuck Norris or Stallone flick it has the smarts of a newborn puppy, but is also equally as joyful.

Madcap and silly (in the best possible way) this open-world action-adventure game is bold, brash and vibrant, with more satisfying explosions than a teenager's acne-riddled face. At times you might find yourself dangling upside down from a helicopter, or riding the top of a Cherokee Piper while shooting a missile launcher at foes far below. Or you might just be happy to climb onto the roof of a citizen's car to take in the view. There is such scope for tomfoolery, you might even forget the over-arching storyline. At least for a while.

Some of this will be familiar to fans of the first two *Just Cause* games (released on older-generation platforms) and they will adore the call-backs and gameplay similarities. There is plenty of new stuff too, however, with the heroic actions of Rico Rodriguez enhanced by the inclusion of new gadgets – such as a wing suit and better grappling gun – and more advanced game engine. *Just Cause 3* benefits greatly from the leap to PS4, Xbox One and higher spec'd PCs.

Graphically too, the game is far superior to its prequels. Developer Avalanche Studios has opted for a garish, hyper-real feel to the proceedings, with the PC version looking best thanks to being able to run at 4K on the highest settings. It is also the smoothest, maintaining the most even frame rate.

Both the PS4 and Xbox One struggle sometimes when there is a lot of action on screen, with frame rate drops noticeable. But we doubt you'll care that much as you'll be gleefully blasting multiple towers or sending enemy vehicles into the sky at the time.

Surround sound audio is standard for all versions, with excellent work by the effects team in providing the right mix of bullet fire and explosive bombast in the soundtrack. There's also a superb version of The Prodigy's *Firestarter* on the intro sequence that has been slowed down and rejigged into a South American-sounding tribute. It sounds a bit like something you'd find in a Robert Rodriguez movie and that sums up *Just Cause 3* well. Think *Desperado* rather than *The Bourne Ultimatum* and you're halfway there. Top fun.



Love

Curzon Artificial Eye → Region B BD
£25 approx



Cinematic provocateur Gaspar Noé holds absolutely nothing back with this stereoscopic slice of art-house erotica that uses nonprofessional actors to do things on screen that nobody else would (outside of porn, that is). Away from censor-baiting, *Love* doesn't really have anything new to say about young love, but is at least refreshingly frank and unflinching in its approach to the subject and gains an extra edge from the rather effective use of 3D. Just don't let your kids watch it.



Macbeth

StudioCanal → Region B BD
£25 approx



Given how many adaptations of 'the Scottish play' have hit the bigscreen over the decades, it's hard to imagine that anything new could be done with it. But Justin (*Snowtown*) Kurzel's new film may be the most cinematic attempt to date, marrying the Bard's text to operatic savagery and a series of hauntingly beautiful tableaux. The latter are especially well served by this BD's boldly coloured and crisply detailed 2.40:1 1080p encode (check out those slo-mo battle scenes at the start). Extras are limited to three brief featurettes and a chat with the director.



Jekyll and Hyde: Series One

ITV Studios → R2 DVD
£25 approx



ITV's latest teatime fantasy show reimagines the classic horror story as a superhero series, pitting the original Jekyll's grandson (and his alter-ego) against myriad monsters in 1930s London. Despite the silly complaints about it being too scary for kiddywinks (did these people never watch the original run of *Doctor Who*?) it's great fun and the DVD is technically sound – although the fact that there's no Blu-ray release on the cards is enough to make us as mad as Mr. Hyde.



'Quick! It's a portal to a more successful comic book movie!'

Sucked into a cinematic black hole

This superhero reboot is less *Fantastic Four*, more a frightful bore

→ FANTASTIC FOUR

What is it about Marvel's *Fantastic Four* comic that filmmakers find so difficult to make work? So far fans have had to endure a 1994 cheapie produced by Roger Corman (never officially released, but easy to find as a bootleg) followed by a brace of bland big-budget efforts in the last decade from Tim Story.

But as weak as those films were, they've got nothing on this latest franchise reboot. Despite assembling a formidable young cast (Miles Teller as Reed Richards, Kate Mara as Sue Storm, Michael B. Jordan as Johnny Storm and Jamie Bell as Ben Grimm) the entire thing comes off as a huge misfire that gets pretty much everything wrong.

We're not just talking about getting nerdy comic book stuff wrong, either (although it messes all of that up, too). No, writer-director Josh Trank's *Fantastic Four* is quite simply a terrible piece of cinema. The main characters are underdeveloped, the special effects aren't special at all and every inch of joy or humour has been sucked out.

Worst of all, though, is the wonky pacing. After a glacially slow opening hour the film finally gives its foursome their powers. It then discovers that there's only half-an-hour or so for them to learn how to use them (hence a sudden leap one year on from the accident) and then save the world from the hastily introduced Doctor Doom (Toby Kebbell). *Fantastic* it most definitely isn't. We guess fans will just have to wait another five years for the next reboot...



Picture: This relentlessly drab superhero flick arrives on Blu-ray with a solid but not exactly spectacular AVC 2.0:1-framed 1080p encode.

Shot using Arri Alexa cameras, brighter scenes exhibit plenty of intricate image detail, but they tend to be few and far

between. Colour reproduction is also pretty striking when primaries are on show, but this again isn't all that often. Thankfully, the all-important black levels are deep and stable.

Audio: While not without its pleasures, the film's DTS-HD Master Audio 7.1 mix always feels like its holding something back. While dialogue sounds perfectly natural and the score (by Marco Beltrami and Philip Glass) has plenty of range, use of the surrounds is limited to low-key ambient effects for the bulk of the first half of the film.

Things take a step up as Planet Zero strikes back against the interlopers (Chapter 13) and by the time we get to the final showdown with Doom (Chapters 24-26) the full speaker array is employed to immersive effect. But your sonic expectations for a modern superhero movie are likely to remain unfulfilled even after this climax.

Extras: Given the film's rather troubled production, it's not surprising to see that Fox hasn't provided much in the way of extras on this Blu-ray. All you get are a 20-minute *Making of...* documentary, three further behind-the-scenes featurettes (*The Quantum Gates*, *Planet Zero* and *The Score*), plus a pair of concept art galleries.



Despite the silly specs, this is one superhero film that isn't in 3D



HCC VERDICT

Fantastic Four
→ 20th Century Fox → All-region BD
→ £25 approx

WE SAY: 'Fantastic' is stretching the truth a bit where this disastrous comic caper is concerned

Movie ★★★★★

Picture ★★★★★

Audio ★★★★★

Extras ★★★★★

Overall ★★★★★



Mythic movie gets masterful BD

Limited edition release offers you three different ways to watch this classic Western

→ SHANE

A mysterious drifter arriving in a frontier town to stand up for the underdog has become one of the most common tropes of the Western movie. But rarely has it been done as well as in George Stevens' 1953 Technicolor masterpiece.

This iconic book adaptation stars Alan Ladd as the enigmatic gunslinger who intervenes in a war of intimidation being waged by a ruthless Wyoming cattle baron (Emile Meyer) on a community of homesteaders. And away from the pistol action there's also the small matter of the obvious attraction between Shane and the wife (Jean Arthur) of the homesteader (Van Heflin) whose hospitality he accepts.

A landmark film in the development of the genre, *Shane* still impresses today with its intelligent storytelling, realistic approach to violence (for the time), nuanced performances (there are no real bad guys, just different points of view and methods of enforcing them) and the breathtaking vistas that unfurl on the screen. And then there's *that* final shot, one last mystery that critics and film fans have been picking over for decades. Unmissable.

Picture: Originally shot and composed in the 1.37:1 Academy ratio, when *Shane* hit the bigscreen it was in a vertically cropped 1.66:1 widescreen version (much to the director's chagrin) as Paramount fought back against the popularity of TV. Eureka's initial Blu-ray release of *Shane* (limited to just 2,000 copies) features both versions, plus an additional re-framed 1.66:1 presentation supervised by George Stevens, Jr. spread across two hi-def platters.



Despite the framing differences and the fact that the two 1.66:1 versions were achieved by 'zooming in' slightly on the original film, technically there's very little difference between the three HD presentations. Colour saturation in particular stands out, backed up by crush-free black levels and a natural grain structure. The source materials are in fantastic shape.

Audio: All three versions offer the same choice of mono or stereo LPCM soundtracks. There's not really much to call between them, with the stereo mix only adding a slightly greater sense of separation during the gunfights. Unfortunately, the stereo track (on all three presentations) suffers from digital dropouts in a couple of places.

Extras: As well as the triple offering, *Shane*-hedz also get a chat-track (on the 1.37:1 version), the trailer, the 1955 Lux Radio Theater adaption and a scholarly appreciation of the film.



HCC VERDICT

Shane

→ Eureka: Masters of Cinema
→ Region B BD → £23 approx

WE SAY: A masterful Blu-ray package for George Stevens' classic Western. Grab it before they're all gone!

Movie ★★★★★

Picture ★★★★★

Audio ★★★★★

Extras ★★★★★

Overall ★★★★★

The Quiet Man

Eureka: Masters of Cinema
Region B BD → £23 approx



There's no shortage of Irish blarney in this classic 1953 romantic comedy starring John Wayne and Maureen

O'Hara. While some will take issue with the idea that such lightweight fare could be director John Ford's best film, there's no denying that it's his most beautiful – the three-strip Technicolor photography makes the utmost of the picturesque locations. Given how poor previous DVD releases have looked, this UK Blu-ray's gob-smackingly gorgeous 1.37:1 Full HD encode is a real eye-opener and ranks up there with the best Technicolor restorations we've ever seen.



Day of the Outlaw

Eureka: Masters of Cinema →
Region B BD & R2 DVD → £23 approx



Feuding homesteaders and ranchers in an isolated Wyoming town must work together when a band of outlaws

turn up and take the townsfolk hostage. Shot in stark black-and-white, André De Toth's snowbound 1959 Western is about as tough and bleak an example of the genre as you'll ever see and fully deserves the fine treatment it has been given on this Blu-ray release. In addition to a crisply rendered 1.85:1 1080p encode, the disc features an appreciation of the film by French filmmaker Bertrand Tavernier and a lossless isolated music and effects track. Yee-as-they-say-haw!



Hiroshima mon amour

StudioCanal → Region B BD
£25 approx



One of the cornerstones of the French New Wave filmmaking movement, Alain Resnais' poetic 1959 film uses nonlinear

narrative techniques to explore the notion of memory through the prism of a brief-but-intense relationship between a French actress (Emmanuelle Béart) and a Japanese architect (Eiji Okada) in the rebuilt Hiroshima. Based on the same 4K restoration that served as the basis for the Criterion BD released in the US last year, this UK platter looks remarkable. Unfortunately, it can't hold a candle to the Criterion disc when it comes to extras, only finding room for a couple of interviews.



The Cannonball Run

Mediumrare → Region B BD
£18 approx



Less a story than a series of vehicular stunts strung together by Burt Reynolds and his all-star chums

goofing around, *The Cannonball Run* is a fun ride while it lasts, making amends for the odd lapse in taste with the plenty of exciting stunts. This Blu-ray release doesn't offer much in the way of extras (just a couple of trailers and a new interview with Roger Moore), but it does hold up pretty well from a technical standpoint with its robust 1.78:1 encode and choice of lossless stereo and 5.1 audio. The truly dire sequel is also available if you're a *Cannonball* completist.



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This is an all-new *Top Gear* lineup we could definitely get behind...



Marvel embraces girl power

Hayley Atwell proves that you really don't need to have superpowers to be a superhero

→ **AGENT CARTER: THE COMPLETE FIRST SEASON**



HCC VERDICT

Agent Carter: The Complete First Season

→ Walt Disney → All-region BD
→ £28 approx

WE SAY: The best thing to come out of Marvel last year. Simply fantastic

Movie ★★★★★

Picture ★★★★★

Audio ★★★★★

Extras ★★★★★

Overall ★★★★★

Created to fill the mid-season gap of the second season of Marvel's *Agents of S.H.I.E.L.D.* during its US broadcast, nobody really knew what to expect from the eight-episode *Agent Carter*.

Sure, fans of the Marvel Cinematic Universe knew Peggy Carter due to her presence as Steve Rogers' World War II love interest in *Captain America: The First Avenger* and the well-received *Agent Carter* 'Marvel One-Shot' short included on the *Iron Man 3* Blu-ray. But did this former supporting character really have a life beyond that? Could she really take centre-stage in a TV series? In a word: yes.

Dialing back the clock on the MCU to 1946, this eight-episode miniseries finds former British agent Peggy Carter (Hayley Atwell) struggling to adjust to the post-War world. Now working for the Strategic Scientific Reserve (SSR) in New York City, Carter's life is as much focused on combatting the rampant misogyny of the era as it is battling bad guys.

However, when playboy/industrialist Howard Stark (Dominic Cooper) goes on the run after being accused of selling weapons to America's enemies, Carter puts her old skills to use, working secretly to prove his innocence – in the process putting her at odds with her SSR colleagues who have been tasked with Stark's capture.

Some may have thought that being set so far apart from the rest of the MCU may have hurt *Agent Carter*, but it's actually one of the show's greatest

strengths. Freed from the need to dive into a world of superheroes, only without the budget to do it properly (*Agents of S.H.I.E.L.D.* anyone?), this series is able to carve its own distinctive path peppered with fan-pleasing nods towards future events. Add to that Atwell's superb central performance and her hilarious (and strictly platonic) interplay with Stark's stuffy but loyal butler Edwin Jarvis (James D'Arcy) and you have a show that fires on all cylinders for the entirety of its run. More please.

Picture: Disney's Blu-ray release splits the eight episodes across two hi-def platters and, as you would expect, the resulting AVC-encoded 1.78:1 1080p transfers are extremely polished.

While the show's retro-aesthetic favours a soft-focus look achieved through pumped-up highlights, the clarity and precision of the digital photography still shines through in the refined textures and intricate details evident in the Full HD imagery. Colours are also vibrant with bold primaries and rich secondary tones on show throughout. Black levels are also rock-solid.

Audio: Working within the restrictions of a TV series, *Agent Carter*'s DTS-HD Master Audio 5.1 mixes are highly effective. Dialogue is front and centre as you'd expect, Foley effects are deployed across the entire soundscape and LFE underpins the action scenes with plenty of added weight.

Extras: Disappointingly, the sole bonus feature included on this Blu-ray release is a three-minute *Bloopers of Agent Carter* gag-reel. It's safe to say that this brilliant show deserved a whole lot more.

The Bridge: The Complete Season 3

Arrow Films → Region B BD
£35 approx



An expanded focus on the personal life of troubled protagonist police detective Saga Norén (the brilliant Sofia Helin) sees this acclaimed crime series retain its iron grip on the Nordic Noir crown. Not only is this third season the show's best to date, the same is also true of Arrow's triple-disc Blu-ray release. In addition to its crisply delineated AVC 1.78:1-framed 1080i encodes and moody DTS-HD MA 5.1 audio, the set includes a superb hour-long documentary looking at the making of the earlier seasons, and a 38-minute Q&A with Helin.



Aaaaaaaah!

Icon Home Entertainment
Region B BD → £18 approx



Comedian Steve Oram delivers a one-of-a-kind piece of social satire with his feature film debut as a writer and director. Set in a world where people act and grunt like apes, Oram plays an alpha male who emerges from a woodland and disrupts the home life of a family living in the city. Bonkers? You bet. But it's also an outrageously funny look at modern life. On top of its well-rendered 1.37:1 1080i/50 imagery and DTS-HD MA 5.1 audio, the Blu-ray also finds room for a director's commentary and a featurette about the cast – both of which are provided in 'ape language' versions as well...



Magic Mike XXL

Warner Bros. → All-region BD
£25 approx



This sequel to the 2012 Steven Soderbergh hit strips away (ahem) the more thoughtful and darker aspects of that film in favour of a far dumber 'one last ride' outing for Mike (Channing Tatum) and the gang as they get their kit off for hordes of appreciative ladies. Sadly, doing this strips (sorry) the material of the magic that made the original so enjoyable – unless all you really want to do is watch greased-up hunks gyrating in gold lamé pants. Still, while the film is a bit of a dud, it at least looks and sounds the part in HD with its eye-popping 2.40:1 1080p visuals and booming DTS-HD MA 5.1 sonics.



Momentum

Signature Entertainment → Region B BD
£20 approx



For a film that could only manage to scrape up a total of £46 in box office takings across ten UK cinemas on its opening weekend, *Momentum* turns out to be a disappointingly generic action-thriller. There's nothing glaringly offensive or awful to be found here, just a sleek and clichéd cat-and-mouse tale that pits Olga Kurylenko's thief against James Purefoy's hired killer. Unusually for a Signature BD release, the 1080p encode is presented in its original 2.40:1 aspect ratio; a sign that the label is finally done with 16:9 crops? The picture and (DTS-HD MA 5.1) sound both impress from a technical standpoint.



Sex and violence, California-style

Flawed second season of HBO's crime drama is still worth investigating on Blu-ray

→ TRUE DETECTIVE: THE COMPLETE SECOND SEASON

There can't be many TV series that have had as much to live up to as this second season of Nic Pizzolatto's crime anthology series. Given the overwhelming praise that greeted *True Detective's* first season, it seemed like anything less than the ability to cure cancer would see the follow-up denounced as a massive failure – which is presumably why it ended up on so many critics' 'worst of the year' lists.

In truth, this second season is a flawed but still solid slice of Californian neo-noir. It takes too long to find its feet and the three leads are possibly *too* broken this time around, but there's still plenty here for fans of grim and nihilistic cop drama to savour.

Picture: HBO has done it again, delivering another collection of flawless AVC-encoded 1.78:1 Full HD transfers. Blacks here are deep, colours are bright, detailing is impeccably resolved and there's no trace of ringing, extraneous noise or other digital anomalies.

Audio: While the show is primarily driven by dialogue, these DTS-HD MA 5.1 tracks still make extensive (and effective) use of the surrounds for ambient and atmospheric impact, ensuring that the murky locations really come to life. Equally impressive is the treatment of T. Bone Burnett's haunting score.

It would also be remiss not to mention the shoot-out that ends the fourth episode, which provides an endless stream of dynamic positional effects and some hefty bass as bullets are sprayed around the soundstage and an explosion rips through a building.



America's answer to *Little and Large*

Extras: As with the first season, two of the episodes are accompanied by audio commentaries that help shine a light on the production process and the themes being explored this season. *Down Will Come* (episode four) features series creator/executive producer/writer Nic Pizzolatto and actors Colin Farrell, Vince Vaughn, Taylor Kitsch and Rachel McAdams; while *Omega Station* (episode eight) reunites Pizzolatto, Farrell and Vaughn, and sees them joined by executive producer Scott Stephens.

Making "The Vinci Massacre" (29 minutes) is a superb in-depth look at the making of the shoot-out that dominates the final act of the fourth episode. *A Look Inside True Detective* (10 minutes) offers a more general look at the making of the second season, with input from all of the main players. Finally *True Detective's California* (four minutes) is a montage of aerial shots of the region shot for the series, set to music.



HCC VERDICT

True Detective: The Complete Second Season

→ HBO Home Entertainment

→ All-region BD → £40 approx

WE SAY: The show may be a bit hit and miss, but this BD release isn't

Movie ★★★★★

Picture ★★★★★

Audio ★★★★★

Extras ★★★★★

Overall ★★★★★



The godfather of yakuza movies

Japanese crime saga will steal the hearts of film fans with this bountiful boxset

→ KINJI FUKASAKU'S BATTLES WITHOUT HONOUR AND HUMANITY: THE COMPLETE COLLECTION

Arriving in Japanese cinemas in 1973, Kinji Fukasaku's *Battles Without Honour and Humanity* revolutionised the idea of the yakuza film. Until then, the genre had primarily worked as an update of the country's samurai epics, populated by pre-War tales of chivalry and loyalty among gangsters. Adapted from a series of newspaper articles about the yakuza, Fukasaku's film adopted more of a documentary style for its post-War tale of infighting among the criminal gangs operating around Hiroshima. Bleak and brutal, *Battles Without Honour and Humanity* struck a nerve with Japanese audiences and was

swiftly followed by four sequels – *Hiroshima Death Match* and *Proxy War* (both 1973), *Police Tactics* and *Final Episode* (both 1974). The resulting series of films (aka *The Yakuza Papers*) has often been called Japanese cinema's answer to *The Godfather* and, as far as we're concerned, it's a comparison that Fukasaku's sprawling crime saga easily lives up to.

Picture: While not among the top tier of the label's HD presentations (the HD masters were supplied directly by Japanese studio Toei), the five films in the *Battles Without Honour and Humanity* series still make a pretty good impression on Blu-ray.

Presented in their original 2.35:1 aspect ratios, the AVC 1080p imagery has a slightly thick and drab



Nobody could work out how he'd got stuck in the cat box



look to it familiar from other Japanese films of the era. Due to this, fine detailing is generally good in close-ups, but drops noticeably in medium- and long-shots.

Audio: Each of the films sports an LPCM 1.0 mono presentation of its original Japanese soundtrack. As with the video transfers, there are imperfections to be found in each mix, but we have no doubt that the Blu-ray tracks are an accurate reflection of the source materials that were provided.

Extras: There's a commentary on the first film, interviews, trailers, a 146-page book of essays and a hi-def presentation of *Battles Without Honour and Humanity: The Complete Saga*, a 224-minute re-edit of the first four films released in 1980.

HCC VERDICT

Kinji Fukasaku's Battles Without Honour and Humanity: The Complete Collection

→ Arrow Video → Region A/B BD &

R1/R2 DVD → £75 approx

WE SAY: A criminally good boxset

Movie ★★★★★

Picture ★★★★★

Audio ★★★★★

Extras ★★★★★

Overall ★★★★★

Blood Rage: Limited Edition

Arrow Video → All-region BD & R0 DVD
£18 approx



This isn't one of the better known 1980s slashers (under any of its various names), but that hasn't prevented Arrow Video from giving it an all-encompassing Blu-ray package.

As well as a good-looking 2K restoration of the original 82-minute home video version (entitled *Blood Rage*), this limited edition set also throws in a bonus Blu-ray platter hosting the re-edited 79-minute theatrical release (*Nightmare at Shadow Woods*) and an 85-minute composite cut using footage from both. Also included are a chat-track, interviews, a location guide, trailers, outtakes and much more.



Nekromantik 2: Limited Edition

Arrow Video → Region B BD & R2 DVD
£25 approx



German schlockmeister Jörg Buttgerit gave his notorious 1987 horror a gender switch with this even more contentious

1991 follow-up (German authorities attempted to ban it and have the negatives destroyed). Presented completely uncut on this Limited Edition UK Blu-ray, *Nekromantik 2* looks far more polished than its predecessor – not that this makes it any less revolting. Copious bonus features including a commentary, location tour, interviews, two short films and an archival *Making of...*, plus a 100-page book, art cards and CD soundtrack.



What Have You Done to Solange?

Arrow Video → Region A/B BD & R1/R2 DVD → £18 approx



Massimo Dallamano's stylish 1972 giallo has its black-gloved killer carving a bloody swathe through the student

body at a Catholic girls' school in London. Primarily based on a new 2K restoration of the original 2-perf Techniscope camera negative, the disc's 2.35:1-framed 1080p transfer holds up well to close scrutiny; likewise the DTS-HD MA mono audio has been cleaned up nicely. Extras are plentiful and include a commentary by genre experts Alan Jones and Kim Newman, interviews and a visual essay about the film and its two semi-sequels.





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Disappointing	★★★☆☆
Dire	★★★☆☆

TOP 10 TELEVISIONS

All prices are approx and may have changed

- 1 Sony KD-75X9405C → £7,300 ★★★★★**
 This giant TV offers an irresistible blend of top-spec Ultra HD visuals and bassy, immersive audio. The direct LED backlight provides nuanced contrast; HDR support is promised via an imminent firmware upgrade. *HCC #250*
- 2 Samsung UE65JS9500 → £6,000 ★★★★★**
 Not cheap, but that's the only real downer about Samsung's range-topper. The super-bright 4K panel is ready for incoming HDR/UHD BD content; performance is excellent. *HCC #246*
- 3 LG 55EG960V → £3,800 ★★★★★**
 LG's second-gen 4K OLED display boggles with its black levels and detailing, and is a joy to drive via the WebOS 2.0 interface. No HDR support via HDMI, though. *HCC #250*
- 4 Panasonic TX-50CX802 → £1,500 ★★★★★**
 This 50-incher still packs Panasonic's premium processing and Smart skills. Performance is the best yet from the brand's LED stable, with excellent presets and backlight uniformity. *HCC #252*
- 5 Panasonic TX-50CX700 → £900 ★★★★★**
 4K needn't be the preserve of those with big wallets seeking big displays. This 50-incher impresses with its Firefox-powered UI, vibrant colours and slender design. *HCC #252*
- 6 Samsung UE55JS8500 → £2,300 ★★★★★**
 While shorn of some of the features of the JS9500 flagship (most notably the full-spec One Connect box), this step-down HDR set still packs a picture-quality punch. *HCC #251*
- 7 Philips 40PFT6510 → £480 ★★★★★**
 This Ambilight-toting, Android smart TV shows that regular Full HD imagery can still impress, helped by Philips' efficient processing and direct LED illumination. *HCC #253*
- 8 Sony KD-55X8505C → £1,300 ★★★★★**
 With neither the large speaker array or ultra-slim design of more expensive Sony 4K TVs, this modestly-priced Android set's main attraction is its sharp, colour-rich visuals. *HCC #251*
- 9 Loewe Connect 55 → £2,800 ★★★★★**
 Superb video processing and onboard PVR functionality are the highlights of this 55in 4K screen, but the lack of UHD streaming services, and a clunky interface, disappoint. *HCC #249*
- 10 LG 65UF850V → £2,500 ★★★★★**
 A good (but not brilliant) all-round package, mixing a 4K IPS panel, WebOS 2.0 interface and a sleek design. Image quality suffers from average blacks and fussy motion. *HCC #249*

TECH INFO: TELEVISIONS



What? No plasma?: The TV market is now dominated by LED-lit LCD screens. Manufacture and sale of plasma display panels (PDPs), which previously came into play above 42in, has ceased. With LED comes newer technologies. 4K models with a native resolution of 3,840 x 2,160 should at least be on your audition list if you're thinking of a new display; curved models are a consideration if you want to impress the neighbours. Look out for sets claiming support for HDR content, which is part of the forthcoming UHD Blu-ray spec.



Active or Passive: At the beginning of the 3D era, most TVs featured the Active system that uses relatively expensive, powered 3D specs to deliver full-res images to each eye. Passive 3D TVs, which are now more common, have a filter over the screen and use non-powered specs with polarising filters. The glasses are cheap as chips, but the resolution of Full HD 3D is halved to 540 lines horizontally (but remains at 1,920 vertically). The same halving occurs with a 4K screen. Some brands offer both Passive and Active models, depending on the panel used. Glasses-free 3D, heralded by Toshiba's early ZL2 TV, hasn't caught on. The tech is still being worked on, though.

TOP 5 BLU-RAY MOVIES

**Ant-Man 3D**

This micro-hero origin movie is a fun, quick-witted addition to the Marvel Cinematic Universe and is blessed with a 3D presentation that gets the most from the unusual imagery. No Atmos mix, but the DTS-HD track is fine.

★★★★★

**Jurassic World**

Grab some popcorn and watch this enjoyable, SFX-laden dino romp. The soundmix, while only a traditional DTS-HD 7.1 affair, packs a prehistoric punch and the bright, high-contrast 2.0:1 visuals look great.

★★★★★

**Inside Out**

More the Pixar of *Up* than *Cars*, *Inside Out* is an emotionally-charged 'toon that's sure to raise tears as well as smiles. Both 7.1 audio and Full HD picture are rock-solid. Get the Steelbook edition for the best extras.

★★★★★

**Mad Max: Fury Road**

It's back to the outback in this action epic that mixes a lean narrative with astonishing set-pieces. The disc's Dolby Atmos soundtrack is a delight, and image quality is pin-sharp. Instant reference status!

★★★★★

**Interstellar**

Christopher Nolan's monster-budget cerebral sci-fi is a real Blu-ray showcase, with its IMAX-shot footage deserving of the biggest screen you can find, and Hans Zimmer's score sounding simply stunning.

★★★★★

Top 10 BLU-RAY PLAYERS

All prices are approx and may have changed

- 
Oppo BDP-103D → £600 ★★★★★
 Oppo's first deck for two years was worth waiting for. The universal BDP-103EU featured a class-leading build and all manner of bonus goodies, including twin HDMI inputs. AV performance was faultless, and the onscreen menus superb. This newer model, the BDP-103D, adds Darbee Visual Presence processing for you to play with. HCC #228
- 
Pioneer BDP-LX88 → £1,300 ★★★★★
 The Japanese corp returns to the disc-playing high-end with a universal deck that weighs more than your AVR and drips with user tweaks and processing features. Stonking performer. HCC #246
- 
Oppo BDP-105D → £1,100 ★★★★★
 This heavyweight deck builds upon the premium picture performance of the BDP-103D with a wealth of audiophile upgrades – if you're serious about music, check it out. HCC #234
- 
Arcam FMJ UDP411 → £1,200 ★★★★★
 Pristine visuals – including upscaled SD – and a classy sonic performance grant this Arcam instant appeal. The design and build is commensurate with the premium price tag. HCC #244
- 
Sony BDP-S7200 → £220 ★★★★★
 A Sony deck without the curious angular design, the BDP-S7200 offers SACD support, hi-res audio streaming and 4K upscaling that's worth investigation. Not too pricey, either. HCC #239
- 
Cambridge Audio CXU → £900 ★★★★★
 Styled to match the brand's other CX components, this universal deck matches its audio and video chops with plenty of features, including Darbee and HDMI switching. HCC #253
- 
Pioneer BDP-LX58 → £500 ★★★★★
 Short on 'net content and a bit slow in use, but these are minor complaints – this model (which ranks below the BDP-LX88) is a gorgeous, thoroughbred Blu-ray performer. HCC #250
- 
Panasonic DMP-BDT700 → £500 ★★★★★
 Claiming THX-certified 4K upscaling and HDMI 2.0 60p passthrough, this mid-range deck from Panasonic is a good partner for a modern display. Great audio option, too. HCC #237
- 
Samsung BD-J7500 → £170 ★★★★★
 This well-priced spinner offers twin HDMI outputs and multichannel phono audio for flexible system hookup, an appealing design, Smart features and solid AV chops. HCC #247
- 
Panasonic DMP-BDT370 → £100 ★★★★★
 A solid deck at a great price, the DMP-BDT370 packs 4K scaling and JPEG playback into its full-width design. Let down by the dated Smart platform, although VOD options are good. HCC #251

TECH INFO: BLU-RAY PLAYERS

Matching your deck to your AV receiver: Blu-ray decks are designed to deliver top-notch images but Blu-ray is also about enjoying superior quality sound. When choosing a player, bear in mind the connectivity and decoding features of your AV receiver. If you're still using an older model that doesn't offer HDMI inputs, then you'll need a Blu-ray player with multichannel analogue audio outputs to enjoy decoded hi-res surround sound formats. Similarly, older but still HDMI-equipped receivers may not be able to cope with 3D video/4K output signals, in which case you'll need a deck with dual HDMI outputs – one channelling audio to your receiver amp, the other piping video direct to your TV.

What about the PlayStation?: Sony's console still represents an easy path to hi-def heaven. For a low-budget home cinema system, the £150 PS3 Super Slim makes a decent choice – especially if you like playing games. Control via a joypad is a pain, though, and the console runs more noisily than most BD spinners. The more expensive PS4 is a much better gaming machine, and now available in a ITB version.



DEMO DELIGHT

Tomorrowland: The first flick released theatrically in the wide colour, HDR-toting Dolby Vision format, this bonkers sci-fi looks sumptuous on 1080p BD – colour saturation and detailing of the 2.20:1 encode is exemplary.

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TOP 10 PROJECTORS

All prices are approx
and may have changed**Sony VPL-VW520ES** → £8,800

The big daddy in Sony's domestic SXRD projector range, this couples native 4K optics with HDR compatibility for a state-of-the-art performance. Capable of jaw-dropping imagery and offers plenty of install flexibility. *HCC #254*

**Epson EH-LS10000** → £6,000 ★★★★★

Debuting a laser light source (30,000 hours) and Epson's 4K enhancement processing, this large chassis model is a cinematic triumph. Essential audition for a dedicated room. *HCC #247*

**JVC DLA-X500R** → £5,000 ★★★★★

Armed with a more adept third generation of the brand's proprietary e-shift technology, the X500R continues JVC's winning ways – contrast rich, sharp and full of tweaks. *HCC #232*

**Epson EH-TW7200** → £1,900 ★★★★★

Priced to appeal to those unable to dabble in the £3,000 market, Epson's mid-ranger is a great purchase. No frame interpolation on offer, but colours, contrast and brightness impress. *HCC #232*

**Optoma HD50** → £1,000 ★★★★★

With a retweaked user interface that improves upon previous Optoma light-cannons, the 12V-trigger-toting HD50 is a brilliant budget buy. *HCC #239*

**Optoma HD91+** → £3,500 ★★★★★

This LED/DLP Optoma claims a 20,000-hour lamp life. Setup features include a 1.9x zoom and image quality is generally excellent. Close in price to JVC's 4K eShift line, however. *HCC #252*

**BenQ W1070+** → £650 ★★★★★

An accomplished low-budget DLP model, the W1070+ offers ISF-certified calibration and a 12V trigger in conjunction with a sharp, bright, detailed performance. Bit of a bargain! *HCC #240*

**Philips Screeneo HDPI590** → £1,500 ★★★★★

Neatly designed, the Screeneo offers ultra-short throw projection thrills, albeit at 720p (and the DVB tuner is SD). Good speakers and networking skills complete a nice package. *HCC #233*

**Optoma HD28DSE** → £700 ★★★★★

Affordable Full HD model armed with Darbee Visual Presence processing, which certainly helps give images a boost if you set it up well. Average black levels, though. *HCC #254*

**Acer H6520BD** → £550 ★★★★★

Offering a Full HD resolution and ready for 3D, this budget beamer is a decent no-frills option. No lens shift, and zoom is pegged at 1.1x. Images are bright and well-contrasted. *HCC #252*

TECH INFO: PROJECTORS



Installation: Although projectors can be temporarily placed on a cupboard, stand or shelf situated at the rear of the room (use the adjustable feet on its base to level the image so that it aligns with the screen), a much better long-term solution is to mount it on your ceiling with an appropriate bracket. Projectors can be quite heavy, though, so it's important to ensure that the bracket is attached firmly – ideally, it should be secured to a joist. Position your PJ so that an imaginary line from its lens to the opposite side of the room hits the screen exactly half-way along its width. The location of your screen should therefore dictate where your projector is. A decent tape-measure or laser pointer will help you to determine the position.

Throw distance: Throw distance specifies the distance between the projector and screen for a focused image of given size. As the vast majority of projectors are equipped with a zoom lens, minimum and maximum throw distances are often specified – say, 3.01m to 6.08m for a 100in. 16:9 image. Shorter throw distances are ideal for smaller rooms, and longer ones for larger rooms. Simple.

Throw ratio: Sometimes, a manufacturer will quote a throw ratio rather than a throw distance. This is basically the throw distance divided by the image width. To get the projected image size, divide the distance between projector and screen by the specified figure. Once again, the inclusion of a zoom lens means that upper and lower figures are usually specified.

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Top 10 SPEAKERS

All prices are approx
and may have changed**Monitor Audio Gold 300AV** → £7,150

MA revamps its Gold Series and we pay serious attention. This big-ticket package excels across the frequency range, offers exquisite design and packs setup flexibility via the dipole/monopole FX surrounds. *HCC #251*

**Q Acoustics 3000 5.1 Cinema Pack** → £700 ★★★★★

A superior compact package with driver improvements over the previous 2000i series. The two-way cabinets and dual-driver sub combine to offer impressive audio for the money. *HCC #247*

**B&W 683 Theatre 5.1** → £2,750 ★★★★★

The first step on the floorstanding ladder in B&W's speaker stable, the 600 Series incorporates new tweeter and bass driver designs and offers absurd value for money. *HCC #234*

**KEF R Series 7.1** → £6,500 ★★★★★

A 7.1 array mixing dipolar and direct surrounds, this authoritative package takes its cues from KEF's Blade concept speaker and offers faultless, largescale home cinema sonics. *HCC #217*

**Artcoustic Spitfire SL 7.2** → £17,000 ★★★★★

Slimmed-down cabinets now even easier to install on-wall or behind a screen, with a multi-driver design ensuring they're easy to drive to high SPLs. Ideal for dedicated rooms. *HCC #233*

**Wharfedale Diamond 220 HCP** → £850 ★★★★★

This package offers a lot for less than a grand – two-way surrounds, a potent three-driver centre channel and agile subwoofer. Great movie sound and excellent build. *HCC #248*



NEW ENTRY

Monitor Audio Bronze B5 AV → £1,500 ★★★★★

Like their Gold siblings, these feature switchable surround speakers and MA's C-CAM drivers. Smaller in stature and output, but eminently more affordable. *HCC #254*

**Pioneer S Series 5.0.4** → £2,150 ★★★★★

With Atmos-upfiring drivers incorporated into the cabinets (both the front floorstanders and surround standmounts) this is a neat way of upgrading your system. Bassy, fulsome sound. *HCC #247*

**SVS Prime Satellite 5.1** → £1,000 ★★★★★

These satellites are the smallest speakers from the US marque – but still sizable enough to deliver an impressive full-range performance. Quality subwoofer, too. *HCC #249*

**Tannoy HTS-101XP** → £700 ★★★★★

A great sub/sat option. Tannoy's coaxial drivers excel at treble details; the new dual-driver subwoofer delivers the bottom end with gusto. Decent styling, too. *HCC #252*

TECH INFO: SPEAKERS



Centre speaker: Handles most of the dialogue and onscreen effects. Should be positioned above or below the screen as close to it as possible. Of course, if you're using a projector screen, it should ideally be placed behind it.

Front speakers: Left and right speakers should be positioned either side of the screen, in line with the centre. Turn the speakers in slightly to face the listener if there isn't an even movement of sound across the front of the room.

Subwoofer: Can be positioned wherever it sounds best or can be tucked out of sight due to the non-directional nature of low-frequency signals. Be aware that close positioning in corners or next to walls can create a boomy effect.

Surrounds: Position alongside the listener, pointing in or slightly behind the ears for a good surround effect. The back wall is not a good position for surrounds – it is, in fact, where you should locate the sixth and seventh speakers (rears) in a traditional 7.1 array.

DEMO DELIGHT

Mad Max: Fury Road: This outback actioner comes complete with an inventive, detail-packed Dolby Atmos soundtrack that has to be heard to be believed. Music and atmospheric effects are regularly shunted into the height channels, the subwoofer puts in a serious shift, and object placement is remarkable. Play it loud!



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TOP 10 AV RECEIVERS/AV PROCESSORS

All prices are approx
and may have changed**Onkyo TX-NR3030** → £2,500

★★★★★

The current king of Atmos AVR, this 11-channel design enables four height speakers to be added to an existing 7.1 array with ease. Lithe on its feet and with exemplary steering, this is multichannel audio at its best. *HCC #245*

**Marantz AV8802A** → £3,350 ★★★★★

This 11.2-channel next-gen processor (Atmos, DTS-X and Auro-3D) is an obvious upgrade for a high-performance separates system. Luxuriant, natural sound quality. *HCC #253*

**Denon AVR-X7200WA** → £2,500 ★★★★★

Capable of being upgraded to DTS:X, and sporting HDCP 2.2 support, this Atmos AVR is as futureproofed as it gets. Only a nine-channel design, though. *HCC #248*

**Denon AVR-X5200W** → £1,700 ★★★★★

Offering Atmos – and Auro-3D via a paid upgrade – the Denon X5200W offers nine amp channels and 11.2 processing. Energetic sound and flexible setup. *HCC #243*

**Arcam AVR750** → £4,000 ★★★★★

If all you want from an AV receiver is vast power and effortless performance, this high-end 7.1-channel beast is tailored to you. Little bonus features beyond audio networking. *HCC #225*

**Marantz NR1606** → £600 ★★★★★

A slim receiver with a power output suited to smaller speakers/rooms (7 x 50W), this Marantz still offers Atmos/DTS:X, 4K support and hi-res audio playback. Lively performer. *HCC #254*

**Yamaha RX-A550** → £550 ★★★★★

Only a 5.1-channel model – and subsequently not endowed with Atmos/DTS:X chops – the RX-A550 impresses with its audio performance, design and networking features. *HCC #252*

**Cambridge Audio CXR120** → £1,500 ★★★★★

This Brit-designed 7.2-channel receiver focuses on performance and ignores object-based audio and built-in Bluetooth. Sound quality is assured and construction is monstrous. *HCC #251*

**Onkyo TX-RZ800** → £1,050 ★★★★★

Feature-packed (DTS:X, HDCP 2.2) and sporting a new, clean design, Onkyo's mid-priced nine-channel AVR is easy to use and sounds sprightly, if a little short on aggression. *HCC #253*

**Pioneer VSX-930** → £500 ★★★★★

Operation could be smoother, but there's no doubting this bargain-priced 7.2-channel AVR (with Dolby Atmos) when it comes to precise multichannel delivery. *HCC #249*

TECH INFO: AV RECEIVERS



Tackling new heights: A recent innovation in AVR circles is the introduction of Dolby Atmos, the object-based sound format that has taken off in commercial cinemas and is supported in the home by the likes of Onkyo, Pioneer, Denon, Marantz and Yamaha. This requires new height speakers in addition to a regular 'flat' 5.1 or 7.1 speaker configuration. The heights can either be physically mounted in/on your ceiling, or provided via up-firing reflective models. Setup can be complex, but the results are certainly impressive. Atmos-encoded Blu-rays are a bit thin on the ground, but you can use Dolby Surround post-processing with regular 5.1/7.1 soundtracks to get the most from your new AVR/speakers. Rivals to Atmos are Auro-3D, which uses height speakers in a different configuration, and the forthcoming DTS:X. Most AVR brands have already pledged support for the latter.

How much power?: Many of the mass-market AV receiver manufacturers are involved in a specifications race to see who can say their model is the most powerful, which can be confusing for consumers. For instance, both Krell's £7,000 S-1500 seven-channel power amp and Yamaha's £500 RX-V675 both claim 7 x 150W – the important part is that Krell's figure is into an eight-ohm load with all channels driven, and that Yamaha's is with one channel into a four-ohm load, which is hardly a real-world situation. The best advice is ignore the numbers game and get a demo of your desired AVR with the same, or similar, speakers that you intend to partner it with.

TOP 5 BONUS FEATURES

**Kingsman: The Secret Service Revealed**

A lengthy (92-minute) doc that is a must-watch for fans of the kinetic British comic book adaption, this looks back at the movie's origins and delves deep into its production.

★★★★★

**The Science of Interstellar**

From black holes to the search for planets that can support life, this engrossing 50-minute doc (narrated by Matthew McConaughey) explores the scientific rationale that lies at the heart of the recent sci-fi epic.

★★★★★

**Keepers of The Covenant: The Making of Exodus**

Another great *Making of...* doc supporting a Ridley Scott flick, this 153-minute, seven-part feature covers everything you could possibly want to know about the film's production.

★★★★★

**Eaten Alive**

Lurking in the extra features on 88 Films' Blu-ray release of *Zombi Holocaust* is this fascinating 85-minute documentary exploring Italian cinema's love affair with cannibal horror flicks.

★★★★★

**Talking Fast**

This 30-min interactive feature on the *Fast & Furious 7: Extended Edition* Blu-ray works well in place of a regular commentary. Motor-mouth director James Wan is a great host as he discusses key production aspects.

★★★★★

Top 10 SUBWOOFERS

All prices are approx
& may have changed

- 1  **SVS SB-2000** → £650 ★★★★★
This follow up to the SB-1000, which incorporates a new 12in driver and revamped Sledge DSP amplifier, offers immense value for money. A mid-sized woofer that imbibes your Blu-rays with potent LFE, the SB-2000 sounds quick and taut, and is a perfect introduction to what a truly good sub can accomplish. HCC #233
- 2  **REL 212SE** → £2,750 ★★★★★
Lush design joins engineering nous in this premium sub with two active 12in drivers supported by a pair of passive radiators. Loud, deep and impactful, your BDs are in safe hands. HCC #246
- 3  **JL Audio Fathom F212** → £5,900 ★★★★★
The US brand arrives in the UK in style – this 2 x 12in, 3,000W brute not only looks gorgeous, it's capable of a mindblowing performance. Got a big room? Get one of these! HCC #214
- 4  **REL S-5** → £1,600 ★★★★★
A step up from REL's affordable T series, this 12in model is large and weighty, with a performance level to match. Fast and tight but capable of dropping very low indeed. HCC #234
- 5  **Bowers & Wilkins PVID** → £1,200 ★★★★★
One of the coolest-looking subs on the planet, B&W's PVID uses DSP trickery to craft an opulent low-end performance. The touch-sensitive OLED display is pure class. HCC #212
- 6  **Eclipse TD520SW** → £3,000 ★★★★★
This twin 8in woofer, driven by ICEpower amplification, aims for ultimate speed and tone – and succeeds. Simply put, the TD520SW is worth every penny of its asking price. HCC #249
- 7  **BK Electronics P12-300SB-DF** → £475 ★★★★★
Bass heads can get outrageous value for money in the shape of BK's overperforming 12in sub. A front-firing model is also offered, and other finishes knock the ticket down to sub-£400. HCC #247
- 8  **JL Audio E-Sub e112** → £2,050 ★★★★★
This 12in, 1,500W model from JL Audio's 'entry-level' line seems pricey, but its performance, design and tuning options make the investment oh-so worthwhile. HCC #240
- 9  **SVS PB-2000** → £750 ★★★★★
The ported sibling to the SB-2000, this woofer uses the same driver and amp arrangement, but in a far larger cabinet. Bass goes deeper, but not at the expense of finesse. HCC #243
- 10  **Artison Nano 1** → £800 ★★★★★
Artison's media room-friendly woofer tucks twin 6.5in bass drivers and a 300W amp into its compact frame. Bass extension isn't the deepest, but this is tight, fast and heaps of fun. HCC #253

TECH INFO



Why use more than one sub?: Using two subwoofers (or perhaps four) should, in theory, bring huge rewards in terms of bass performance. But remember that LFE is a tricky beast to control. Running two subs may simply double problems in your room like room boom and suck-outs, where outgoing and reflected bass sounds cancel each other out. If you have some flexibility in where you place subwoofers, trial and error may well throw up some interesting results. The acoustics wizard Floyd E Toole (his book *Sound Reproduction: The Acoustics and Psychoacoustics of Loudspeakers and Rooms* is fine bedtime reading) suggests one LFE sub to either side of the room may be best for accuracy while placing them in the front corners would be best for overall bass power. Yet there is no hard and fast rule as to what will work best for every room, and you may find that simply using one (large) subwoofer is preferable as it's the easiest to get sounding right.

DEMO DELIGHT

Fury: The DTS-HD 5.1 track of Brad Pitt's tank drama is truly a thing to savour, with the audio engineers striving hard to deliver a packed, detailed soundfield that puts you right in the action. And, with its frequent artillery explosions, it's no surprise to find the LFE channel getting a thorough workout. Shells hit deliciously hard with taut bass throbs, while the eponymous tank's rumbles will petrify your pets.

Top 5 CONSOLE GAMES

**The Witcher III: Wild Hunt**

RPG fans will lap this up. Combining a brilliant (if grim) narrative with great game mechanics, sparkly HD visuals and an exhaustive playing time, ...*Wild Hunt* makes *Skyrim* seem like a distant memory.

★★★★★

**Mortal Kombat X**

The king of beat-'em ups, NetherRealm Studios' newest entry into the popular franchise is strewn with gore, plays well and even lets you fight as the Predator if you fork out for the DLC upgrade...

★★★★★

**Batman Arkham Knight**

The concluding part of Rocksteady's Batman trilogy gives players an immense world to explore – everything here is bigger and better than before – and the moody, cinematic visuals are a treat for your display.

★★★★★

**Metal Gear Solid V: The Phantom Pain**

Our pick for 'Game of the Year' in 2015, this open-world stealth/actioner dazzles with its breadth, interaction, flexibility and lush visuals. A fitting end to the legendary series.

★★★★★

**Transformers: Devastation**

Forget the Michael Bay movie series, this action-packed *Transformers* game harks back to the 1980s 'toon series. As such, it looks lush, with its cel-shaded style igniting childhood memories. And it plays great too.

★★★★★

TOP 10 ACCESSORIES

All prices are approx and may have changed

- 1 KEF R50 → £600 ★★★★★**
 KEF's Dolby Atmos-enabled reflective modules are a smart choice for anyone looking to beef up their speaker system. Using the company's Uni-Q point source drivers pays real dividends, enabling full-range sonics that reach deep into your cinema room. Styling and build quality are first rate. £600 gets you a pair – you'll soon want four... *HCC #252*
- 2 Devolo dLAN 650 Triple+ starter pack → £120 ★★★★★**
 This package makes Powerline networking fast (claimed at up to 600Mbps) and easy. The three-port Ethernet extender is sleekly designed, and provides a regular plug socket, too. *HCC #239*
- 3 Dune HD Base 3D → £250 ★★★★★**
 A media player for the AV enthusiast. Full-width and fully-featured, it provides support for 3D BD rips and much more, with a slick user interface and plenty of connectivity. *HCC #235*
- 4 Amazon Fire TV 4K → £80 ★★★★★**
 Amazon reboots its media player to include 4K video prowess, greater storage capability and a souped-up engine. The result is an intuitive add-on that's ideal for 4K TV owners. *HCC #254*
- 5 Samsung WAM7500 → £500 ★★★★★**
 Also known as the R7, this addition to Samsung's multiroom system delivers authentic omnidirectional sonics via its super-stylish oval-shaped enclosure. Expensive, but excellent. *HCC #253*
- 6 QNAP HS-251 → £300 ★★★★★**
 Adding HDMI connectivity to a NAS device is surprisingly useful – and this slim-line model from QNAP is styled to grace your living room. Flawless media playback and responsive. *HCC #248*
- 7 Now TV → £15 ★★★★★**
 Among the new tricks of this second iteration of Sky's compact streamer are 1080p output, microSD and USB inputs and a faster processor. And it's still ridiculously affordable. *HCC #253*
- 8 Sony SRS-X11 → £60 ★★★★★**
 An affordable palm-sized Bluetooth speaker with internal rechargeable battery, Sony's SRS-X11 is supremely portable and sounds decent for the money. A neat little gizmo. *HCC #249*
- 9 WeTek Play → £95 ★★★★★**
 An Android-based media player that can be easily rebooted with open-source operating systems. The result is impressive flexibility. Additional tuner options bring PVR fun. *HCC #252*
- 10 Sony PlayStation 4 → £350 ★★★★★**
 The PS4 offers a killer gaming experience, with the under-the-hood power resulting in great-looking games. 3D Blu-ray playback has now been added via firmware. *HCC #229*

TECH INFO: MEDIA PLAYERS



What about my TV?: Most flatscreen TVs from the major brands (Sony, Samsung, Panasonic, LG, Toshiba and Sharp) also incorporate media player functionality, using Ethernet or Wi-Fi to stream from your home network, or from plugged-in USB drives. Most modern Blu-ray players offer this, too. However, file support is rarely as extensive as on dedicated devices from the likes of Western Digital and A.C. Ryan, and our experience shows some are more adept at playback from USB than over a network. Nor (obviously) is a TV or BD player portable. If your media collection extends beyond JPEGs and MP3s into lossless audio rips and esoteric HD video formats, then a standalone player is a good investment.

Storage: You can, if you really want, store all your files on a plethora of USB drives, or on your PC, but it's best to get a NAS (Network Attached Storage) device for simplified sharing of your media across a network with multiple players, such as one from Netgear's ReadyNAS range (pictured). These dedicated devices often offer RAID array file backup, and are managed via browser software. Storage capacity can be anything from 1TB to 12TB and beyond.



TOP 5 BLU-RAY/DVD BOX SETS

**Hellraiser: The Scarlet Box**

This set ignores the inferior DTV sequels to collect the first three movies in the Clive Barker horror franchise, and offers beautiful restorations plus plenty of in-depth bonus material. Limited to 5,000 copies – be quick!

★★★★★

**The Wire: The Complete Series**

The award-winning war-on-drugs drama hits Blu-ray reframed at 1.78:1 (it was originally broadcast at 1.33:1) and looking good. An 85-minute Q&A is among the extras.

★★★★★

**The Long Good Friday + Mona Lisa**

Two of Bob Hoskins' most iconic roles presented in an extras-packed boxset and given thoroughly impressive HD transfers – both look wonderfully filmic.

★★★★★

**The Avengers: The Complete Series Five**

For this 1967 24-episode run, agents Steed and Peel gallivant around in gaudy colour rather than black-and-white, and image quality on this seven-disc set is astounding.

★★★★★

**Better Call Saul: Season One**

This spin-off from the award-winning *Breaking Bad* stands up well on its own, and this extras-packed BD release features superb 1080p visuals and DTS-HD 5.1 mixes.

★★★★★

Top 10 SOUNDBARS & SOUNDBASES

All prices are approx
& may have changed**Yamaha YSP5600SW**

→£1,900 ★★★★★

With its 46 drivers (including upfiring) this premium 'bar' delivers precisely-steered and immersive audio, even of the Atmos variety. Potent wireless sub and 4K-capable HDMI switching sweeten the high-end deal. *HCC #254*

**Canton DM100** →£530 ★★★★★

An assured 2.1 performance delivered by an eight-strong array of separate tweeters, mid-range and bass drivers in a 1m enclosure. Suited to the large screens of today's 4K world. *HCC #253*

**Sony HT-XT3** →£450 ★★★★★

A great-sounding soundbase blessed with HDMI connectivity, HDCP 2.2, Wi-Fi, Bluetooth, multiroom support, screen mirroring and app control. There's little to complain about. *HCC #250*

**Yamaha YSP-2500** →£800 ★★★★★

An HDMI-switching 'sound projector' using Yamaha's Beam tech to craft impressive surround sonics from its drivers. Efficient sub, plenty of detailing and fun/useful app control. *HCC #243*

**Cambridge Audio TV5** →£300 ★★★★★

Twin 6.5in bass drivers lend the TV5's sound some decent low-end heft, but not to the detriment of the rest of the soundstage. An enjoyable, balanced listen. Easy to use. *HCC #245*

**Q Acoustics Media 4** →£400 ★★★★★

A no-nonsense offering from the speaker specialist, which ignores HDMI inputs and daft DSP modes in favour of creating a nuanced, solid 2.1 soundscape. *HCC #238*

**Monitor Audio ASB-2** →£1,000 ★★★★★

This premium proposition marries Monitor Audio's C-CAM drivers with AirPlay and DLNA music streaming. Performance is exemplary – powerful and polished in equal measure. *HCC #229*

**DALI Kubik One** →£800 ★★★★★

The Danish speaker brand brings a slice of glamour to your setup with this stylish soundbar. No HDMI or digital decoding but it packs a tight, lively and nuanced sound. *HCC #248*

**Philips Fidelio B5** →£600 ★★★★★

Detachable battery-powered side speakers let you enjoy both genuine surround sound and straight 2.1 (there's a wireless sub). And each speaker offers Bluetooth hookup. Innovative. *HCC #249*

**Orbitsound A70** →£500 ★★★★★

Not overly specified – there's no HDMI, for instance – but this elegant 'bar/sub combi just about justifies its price tag with an enveloping and very well-balanced performance. *HCC #251*

TECH INFO: TV PLATFORMS

**TV addicts – go free, or pay-to-view?:**

The analogue switch-off has created a competitive market in free-to-air platforms, while Sky and Virgin Media are squaring up to the likes of EE TV, Amazon Prime and Netflix. Deciding which service is right for you can be complex, and you may find your needs are best catered for by a combination.

Sky+HD: The long-running satcaster offers a plethora of HD channels, with content including recent movie releases, live sports and sought-after US shows. Hardware options include the 2TB dual-tuner PVR. An upgrade, dubbed Sky Q, is arriving soon, and will offer 4K support among its tricks.

Virgin Media TiVo: The cable giant offers a three-tuner PVR (1TB) with intelligent TiVo recording tricks, catch-up apps (including Netflix and Spotify), and over 240 channels (depending on package). Premium Sky content can be added on a monthly basis.

Freeview: The common option when it comes to TVs and set-top boxes. Freeview offers 13 HD channels plus SD and radio. No contract fee. Freeview Play adds IPTV integration to the EPG.

Freesat: Satellite service offering a similar – but not identical – channel lineup to Freeview, delivered via a dish but without a subs cost. Budget-priced STBs are available.

YouView: This relatively new kid on the block integrates the UK's main catchup portals directly into a backwards EPG. Again, channels are broadly similar to Freeview and there's no contract. Humax (PVRs) and Sony (TVs) are leading the hardware charge.

Top 5 BACK-CATALOGUE BLU-RAYS

**Charlie Chaplin: The Mutual Comedies**

Exquisite restorations of the 12 shorts that the little master made for the Mutual Film Corporation in 1916/17. And this two-disc BD comes with some worthwhile bonus bits. ★★★★★

**Blood and Black Lace**

Mario Bava's genre-defining 1964 slasher makes its hi-def debut with a dazzling new 2K restoration that really gets the best out of the film's bold colour palette, alongside an exhaustive array of supplementary features. ★★★★★

**Goodfellas: 25th Anniversary Edition**

As far back as we can remember we always wanted a new 4K restoration of this Martin Scorsese gangster classic. And now we have one, with some new extra features, too. ★★★★★

**The Third Man**

StudioCanal takes a second stab at releasing this celebrated 1949 Brit-noir starring Orson Welles, rewarding buyers with an excellent image taken from a 4K restoration plus some new documentary material. ★★★★★

**Thieves' Highway**

This gripping, revenge-filled 1949 film noir from Jules 'Rififi' Dassin is given deluxe treatment by the Arrow Academy label, with the black-and-white picture looking excellent courtesy of a 4K restoration. ★★★★★



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TOP 5 PVRs

**Virgin Media TiVo, £subscription**

This triple-tuner PVR offers ultimate recording flexibility, useful features – you can undelete deleted shows! – and awesome TiVo functionality. A no brainer if you're in a cable area

★★★★★

**Sky+HD, £subscription**

Sky's channel choice is second-to-none and its twin tuner 2TB PVR is a perfect partner. The recent EPG tweak is welcome and Anytime (the push VOD service) is brilliant for catching up on new movies

★★★★★

**Humax HDR-1100S, £190**

Freesat Freetime PVR that impresses with its usability, VOD options and form factor – Humax's small, white box will slot into any kit rack. We tested the 500GB version – 1TB and 2TB models are also available

★★★★★

**Humax DTR-T4000, £subscription**

This YouView-based PVR is required to get BT Sport's new Ultra HD channel – available to those with BT fast fibre and a BT TV sub. Easy to use and with 1TB of storage

★★★★★

**EE TV Smart Box £subscription**

This quad-tuner 1TB PVR, from the mobile/broadband corp, offers innovative Replay 24-hour channel recording and great Smart device streaming. Needs more catch-up though

★★★★★

TOP 5 HEADPHONES

**Sony MDR-HW700DS, £800**

Comfy cans supplied with an HDMI surround processor, enabling multichannel audio to be fed to a virtual 9.1-channel soundstage. The effect is superb – great for late-night listening

★★★★★

**Oppo PM-1, £1,100**

Audiophile-grade, using planar magnetic driver designs, and with a lush design and build. The sound quality of the PM-1s is superb, so while these are undoubtedly costly, buyers won't be disappointed

★★★★★

**Lindy Croma NCX-100, £100**

A cost-effective domestic option and great for travelling, these noise-cancelling 'phones (which can also be used as a normal passive design) feature a pleasant, balanced sound

★★★★★

**PSB M4U1, £220**

Aimed at both home and on-the-move use (and supplied with a carry case and two cable options), the M4U1s offer solid bass response and impactful highs. Build quality is good, as is comfort

★★★★★

**Beyerdynamic T70, £330**

Closed-back cans with excellent weight distribution for a comfy fit and a sound that doesn't put a foot wrong. These motor through movie soundtracks with vigour, clarity and a solid low-end

★★★★★

TOP 5 SYSTEMS

**Panasonic SC-BTT505, £600**

Two-way driver arrangements in these grown-up looking speakers (plus a dizzying range of features) make this a great purchase. Big, dynamic sound, with strong dialogue

★★★★★

**Samsung HT-J7750W, £800**

Samsung's top-dog in its 2015 lineup is similarly styled and specc'd to last year's H series model. It has a powerful, dynamic sound, but is a little rough around the edges

★★★★★

**Harman/Kardon BDS470, £650**

Harman's 2.1 system eschews 'net TV and streaming features, but majors in heavyweight build quality and solid AV performance. We tested a 2.1 iteration – 5.1 is also available

★★★★★

**LG BH8220B, £650**

With its silver finish, this is a suitable one-box system to partner with LG's flatscreen TVs, with a commendable, if slightly lacking in HF finesse, sound. Additional features including CD-ripping to USB. Handy

★★★★★

**Onkyo HT-S7705, £650**

This Atmos-capable AV receiver and speaker package is an ideal entry-level setup for a forward-looking system. Loaded with features (including Wi-Fi and Bluetooth). Just add a BD deck and you're sorted

★★★★★

HOME CINEMA

Choice

→ IN THE NEXT ISSUE

2016 CES We report on the home cinema highlights from the massive US tech show
HDR Have the standards now been set?
Best of British Spectre leads the charge of Brit-based action flicks on Blu-ray

→ HARDWARE

KEF Reference 5.1 speaker system **Yamaha RX-A3050 AV receiver** **Q Acoustics Concept Series speakers** **JVC DLA-X5000 projector** **Hisense 65XT910 flagship 4K TV** **Panasonic HWT-250 PVR**
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CONTENTS SUBJECT TO CHANGE – BUT ONLY FOR THE BETTER

ISSUE
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MEANWHILE....



AV AVENGER

CES, like Las Vegas itself, is all about glitzy deception. Nothing about the show, says **Steve May**, is what it seems. Apart from the shrimp and beer

LAS VEGAS HAS long been the home of illusionists and tricksters, but the stage shows of David Copperfield and Siegfried and Roy pale into insignificance compared to the sprawling sleight of hand that is CES.

As arguably the world's biggest technology event and certainly the most widely covered, the stakes are high for conglomerates that spend millions to out-shout rivals. In Vegas nothing can be allowed to undermine or diminish the major exhibitors; the world's top tech firms can and will do anything in their power to command the attention of trade and press. And, as befits the proximity of Area 51, there's often a whiff of hoax about what goes down.

I've been attending CES for over two decades. Back then it was all about products – CES really was a Consumer Electronics Show. Today the CEA is insistent that that's not what CES stands for. It's certainly no longer a product show. There's no shortage of announcements, but no guarantee that anything is going to launch soon, if ever. It's simply about grabbing headlines. LG launched OLED at a succession of shows, before being in a position to make products. At CES 2015, DTS demo'd DTS:X and promised a launch of sorts in the Spring. A year on we're still waiting. Back in the day, Sony pulled its Crystal LED TV out of a science lab because it had no other TV story to tell, touting it as the future. It's since gone back into hiding. **New products are routinely hand-made samples that bare no resemblance to what may or may not appear** (not that this stops acres of nonsensical 'first impression' coverage).

There have been some legendary non-launches. Who can forget Warner's unveil of its Total HD hybrid flipper disc in 2007? This combined Blu-ray and HD DVD on one platter. It never appeared and a year

later HD DVD was junked, after Toshiba dramatically cancelled its big CES press conference and bolted.

Something to snack on

When you're a CES regular, you get used to the madness: the impossible press lines that form before big conferences, the inevitable Vegas gridlock that lasts for a week, the dry desert air that causes your lips to split like pinched grapes. And there's the crazy angles. CES Unveils runs in a Vegas ballroom the day before press day. It's generally populated by small brands shilling novelty products, but because the world's press are desperate for stories, the show gets swamped with media and film crews. This is why early coverage of the event is always about stupid stuff like smart toothbrushes and drones. I go mainly for the free beer, shrimps and cheese. For the record, I'll go anywhere for free beer, shrimps and cheese.

CES has also turned into a game of Last Man Standing. Brands that have been mainstays of HCC show reports for years are either near to, or actually defunct, assets and brands sold off. These days great swathes of the AV landscape are owned by Gibson International. Sharp in North America is actually Hisense. The few giants left are scrabbling to quit the consumer market altogether. Sony makes way more money selling camera sensors than it does TVs. CES has countered this by courting the automotive and fitness industries. Miraculously the show continues to grow.

That said, I still love it. It's an indefatigable extravaganza and a lot more fun than the UK in January. Just don't believe everything you see or hear. CES is the ultimate Las Vegas magic act ■

Steve May will be reporting on all the key home cinema news from CES – minus the smart toothbrushes – in the next issue of HCC

Steve May's magic trick is hunting down free drinks and finger food at any time of the day, in any city in the world. And he won't share it with you





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